Paper
TRADE JOURNAL

Jan. 25, 1952

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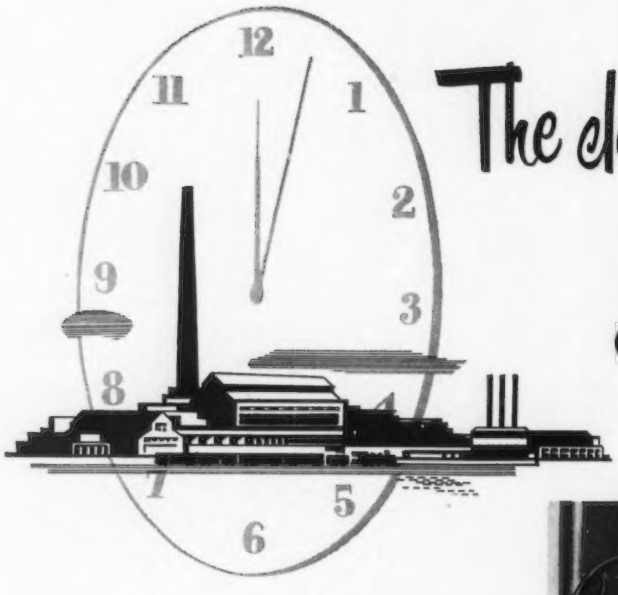

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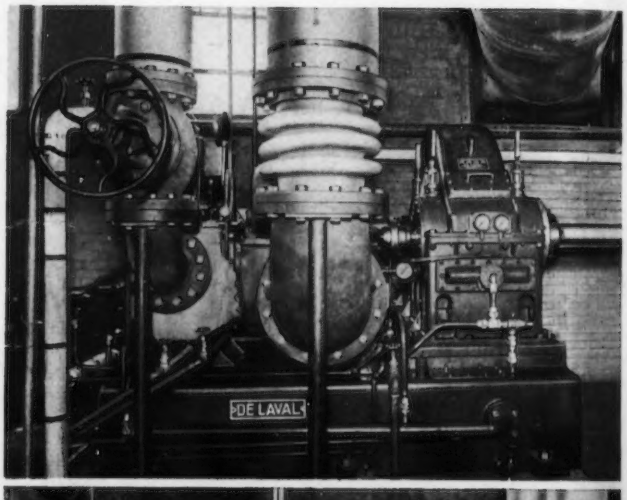

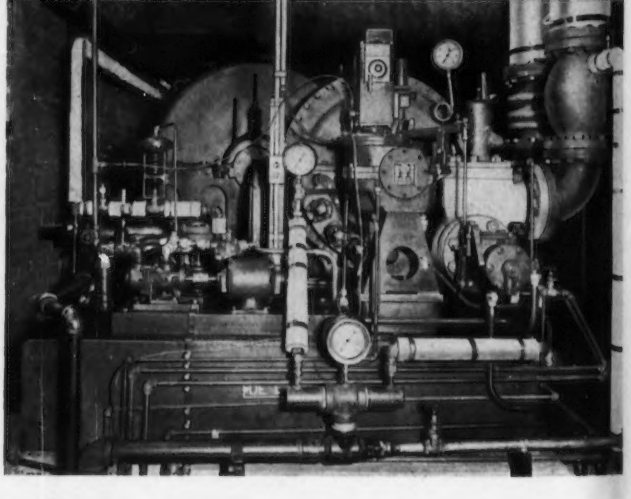

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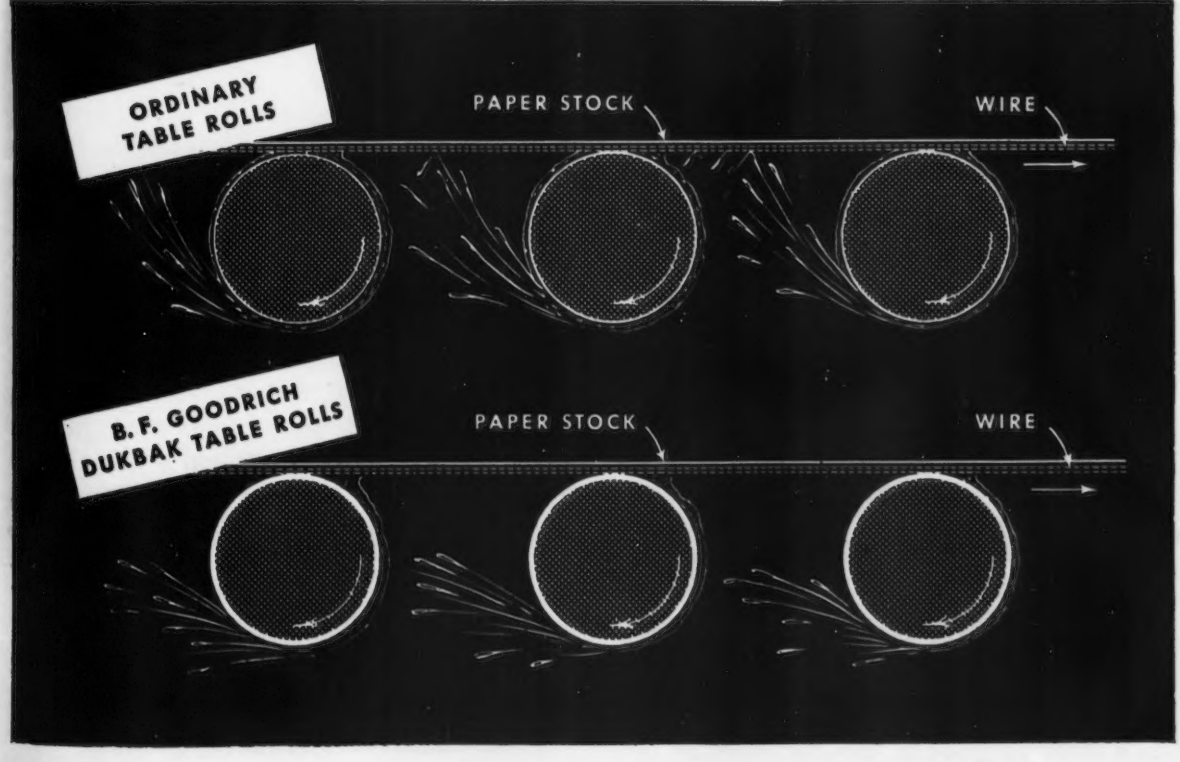

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Paper TRADE JOURNAL

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NEXT WEEK

Annual Canadian Issue

Next week we will cover the annual meetings of the Canadian Pulp & Paper Assn.

These meetings each year are attracting more and more men from all over the world, whose interests are in the Pulp and Paper Industry.

The technical excellence of the papers presented before the Technical Section demands attention.

We will carry the abstracts.

REMEMBER THESE DATES

FEB. 19-22: American Pulp & Paper Assn., Annual Meeting, Waldorf-Astoria Hotel, New York, N. Y. Starts on Tuesday this year. 75th Annual Dinner Thursday, Feb. 21.

FEB. 19: Maine Alumni Luncheon, 12:30, Biltmore Hotel, New York, N. Y.

FEB. 20: M.I.T. Paper Industry Alumni luncheon, Engineers Club, New York, N. Y.

FEB. 20: Salesmen's Assn. of the Paper Industry, Annual Meeting and Luncheon, Waldorf-Astoria Hotel, New York, N. Y.

FEB. 18-21: Technical Assn. of Pulp and Paper Industry, Annual Meeting, Commodore Hotel, New York, N. Y.

MARCH 16-18: American Institute of Chemical Engineers, Atlanta Biltmore Hotel, Atlanta, Ga.

MARCH 24-26: The National Paper Trade Assn., Annual Meeting, Waldorf-Astoria, New York, N. Y.

MAR. 26-28: Woodlands Section, Canadian Pulp and Paper Assn., Annual Meeting, Mount Royal Hotel, Montreal, Que., Canada.

MAR. 30-31: Packaging Machinery Manufacturers Institute, Semi-Annual Meeting, Hotel Dennis, Atlantic City, N. J.

MAY 5-8: Third Coating Conference of the Technical Assn., of the Pulp and Paper Industry, at the Sherman Hotel, Chicago, Ill.

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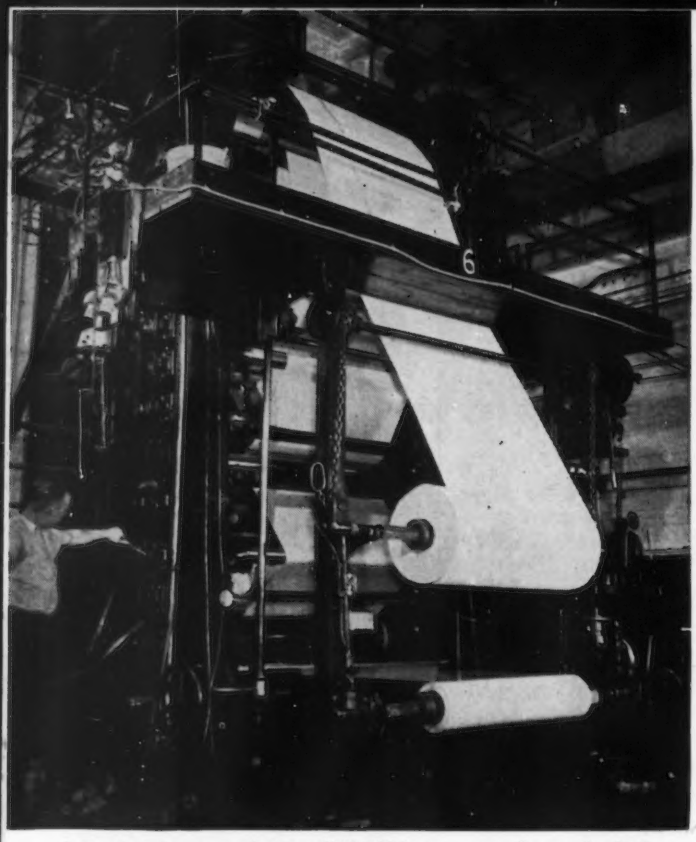

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Paper TRADE JOURNAL

TRENDS

Office of the PAPER TRADE JOURNAL,
Wednesday, January 23, 1952.

Business generally is feeling its way back to pre-Korean levels of volume in an atmosphere of hopefulness. Lacking any precedent for a Defense Mobilization era and a Fair Deal economy — particularly in election year, industry is proceeding with caution, buying to immediate needs only, and selling to a buyer's market. Since every move depends on what Fate turns up — a Fate with its source in Moscow — almost it seems that planned-economy is a concomitant of Fatalism.

Easter Demands for Paperboards Tardy

If, as some believe, consumer buying at the retail level is more truly a business indicator than all the statistics available, then demand for papers and paperboards to meet retail buying must be a clue to "what's cooking" for these industries. At the moment, there are plenty of prepared mixes for either a good year or a bad year in 1952. However, it's not easy to get the smell of what's coming out of the oven yet.

A pickup in paperboard demand for the Easter trade is due. Inventories of boxes and cartons are reported to be light, the market healthy for a good spurt in business.

Buyers are slow in coming to the market, however, with price reported to be the deterrent. Ceiling price levels, which generally are those prevailing, are getting trade resistance. Reasoned by boxmakers is that the current prices were based on waste paper peak prices. Mills, however, expect to hold to ceiling levels, giving as their stand that increases in labor, freight and chemicals have more than offset the drops in waste paper stocks.

Price Situation Ludicrous, Says NAPA

Reporting in January 9 on boxboard conditions for the National Association of Purchasing Agents, Stuart T. Edgerton of the U. S. Rubber Company, New York, terms the price situation ludicrous. "Why board should still sell for the high price it does, when the principal raw component has reached a point where it almost has to be given, is a riddle which cannot be solved, because Washington-planned economy seems to be a planned luxury," wrote Mr. Edgerton.

"While the producers of boxboard can continue for a long time on a low production basis with the high price of board to reimburse them, eventually the low dollar volume of sales will not pay for the high labor costs on a low production schedule. It is reasonable to expect that when that time comes, some producers will cut prices in hope of building up production schedules."

On the other hand, reports of price-cutting to get business are isolated to a few sub-quality items, trade spokesmen state. And since boxboard stocks in consumer hands are low, buyer resistance must soon fade, providing retail demand develops at the hoped-for level.

Table 1
WOODPULP: U. S. PRODUCTION, CONSUMPTION, INVENTORIES NOVEMBER, 1951
(Tons of 2,000 pounds)

Grade	U. S. Production Tons	U. S. Production % of Base	Consumption in paper & bd. manuf.	End of Month Inventories: Pulp[1] mills	Integrated[1] Mills own manuf.	Partially[1] integrated Purchased	Non-[1] integrated Purchased
Total	1,414,965	86.6	1,489,283[1]	100,927	143,628	127,657	238,866
Spec. Alpha & Dissolving	54,182	91.1	4,785	9,246	n.a.	869	13,486
Sulfite, Total .	212,128	86.9	267,934	24,362	34,585	71,052	95,745
Blchd., Total	152,466		171,980	13,942	14,333	25,794	51,412
Unblchd. ...	59,662		95,954	10,420	20,252	45,258	44,333
Sulfate, Total .	749,026	91.7	795,552	26,703	71,750	39,154	90,122
Blchd., Total	170,780		210,163	12,398	52,198	13,529	31,769
Semiblchd. .	26,396		29,012	457		484	5,384
Unblchd. ...	551,850		556,377	13,848	19,552	25,141	52,969
Soda	37,884	69.6	40,986	2,360	2,244	n.a.	9,244
Groundwood ..	202,830	80.1	220,340	33,216	28,816	13,607	26,343
All Others	158,915	76.8	159,686	5,040	6,233	2,975	3,926

Based on Bureau of Census Figures.
* Revised. [1] Preliminary.

Board Output Shows No Gain

Overall output of boards shows a gain from pre-holiday levels of about 85 to 86 percent, with some further easing in container boards reported, new production getting under way this week, and the five Whippany mills still out on strike in their sixth month.

Waste Papers Inactive But Firm

Areas unaffected by snow conditions report little change in general trading in waste papers.

Mixed papers have a nominal mill price of $8/9, f.o.b. cars shipping point. Much lower prices are spoken of, however, as the mills fail to take up the tremendous tonnages available. Burning of the very low grades of *mixed* continues in this area.

News grades are firm at quoted levels and are moving steadily to export markets.

Old corrugated containers are strong at $14/15. In view of the diminished supply which has resulted from the low price paid to collectors, some bad weather could strengthen this price quickly.

For the high grades, both whites and krafts, demand continues steady, prices firm. Easing is apparent only in soft white shavings which are getting much lighter call from tissue mills because of the much easier demand for tissue papers. Spots of distress selling reported do not represent the market in this area which pricewise is firm.

Cotton Cuttings Easier

Slow and indifferent buying of cuttings is reported in eastern markets, with paper mills unwilling to commit themselves to large purchases until the picture clears as to their future demands. Old rags also are quiet with no change from quoted ranges.

Anticipated Wood Pulp Easing

Anticipating that the first and second quarters of the year will see develop a marked easing in demand for wood pulps, the OPS met with its Advisory Committee, representatives of NPA, MSA (Mutual Security Agency which grew out of ECA), and of the State Department, and discussed again a second rollback in ceiling buying prices of overseas pulp.

Specifically the group met to review market conditions and the effect on consuming mills should the new rollback be authorized. Original OPS plans had contemplated a rollback to the Canadian price level in one move or in two, with the decision centering on two moves, first of which was effected last July with release of CPR 49, the Wood Pulp price order.

A further discussion last Fall resulted in the matter being tabled for three months. Last week's meeting reopened the matter, reviewed it under present market conditions, and again tabled it for further study, it is reported.

Industry spokesmen believe that a change in market balance can be expected during the next two quarters of the year, but that it is not marked enough yet to hazard a new rollback.

As will be noted from *Table 1*, overall inventories are building steadily, but in the bleached grades particularly need depth. Improvement in bleached krafts will show consistently with the return of the 225 daily tons output of Weyerhaeuser mill to the market.

—E.P.N.

Paperboard Production (Tons)*

	Jan. 12 1952	Jan. 5 1952	Jan. 13 1951
Production	210,349	82,568	241,472
New Orders	195,092	149,591	262,530
Unfilled Orders ...	405,521	422,412	746,287
%of Activity	86	64	106

* Source: National Paperboard Assn.

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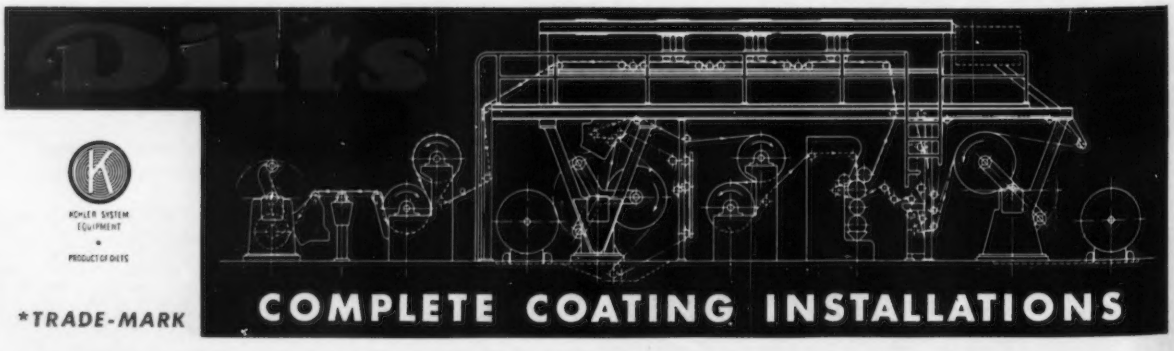

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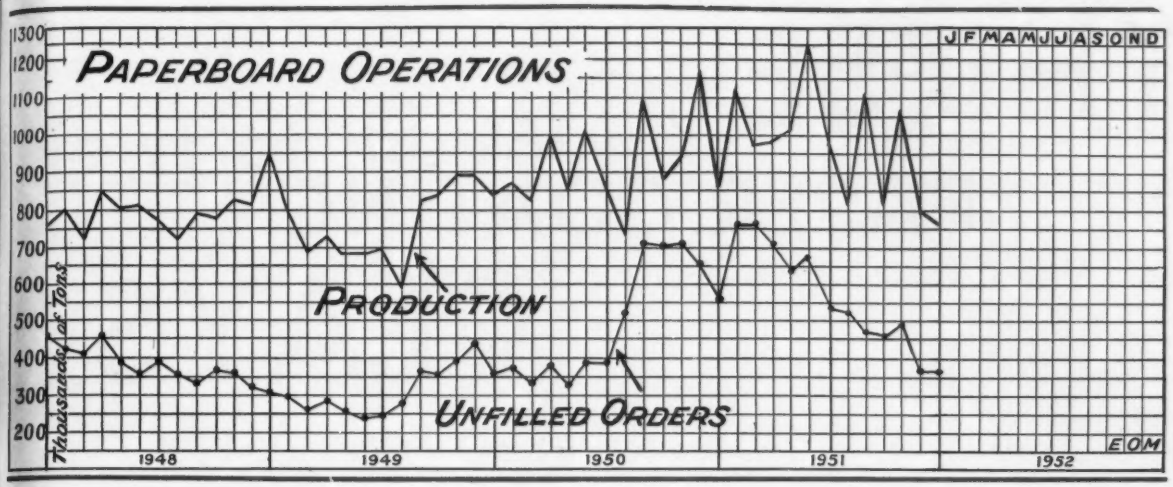

Brief of Important Figures

Source		WEEK ENDING Jan. 12, '52	Dec. 15, '51	Jan. 13, '51
	Production			
APPA	Paper Production Percent Capacity[3]	99.9	97.0	100.0
	Unbl. Kraft Paper Production Percent	94.1	108.8	98.3
NPA	Paperboard Operating Ratio Percent Inch Hours	86	86	106
		Nov. 1951	**Oct. 1951x**	**Nov. 1950**
APPA	Paper Production[4] (Except Newsprint and Building Papers) ....Tons	930,000	946,039	872,000
	New Orders ....Tons	864,000	941,862	831,000
	Unfilled Orders ....Tons	920,200	976,113	869,900
	Shipments ....Tons	920,000	946,295	872,000
		Dec. 1951	**Nov. 1951**	**Dec. 1950**
NPA	Paperboard Production ....Tons	757,914	794,359	862,905
	New Orders ....Tons	768,320	685,733	778,394
	Unfilled Orders ....Tons	358,720	365,363	617,245
	Our Customers Activities Index[1]	**Latest Mo.[5]**	**Previous Mo.[5]**	**Year Ago[5]**
FRS	Manufactures Total Index	231	233	229
	Durable Mfg. Index	276	274	263
	Nondurable Mfg. Index	194	199	201
	Chemical Products Index	307	306	282
	Mfg. Food Products Index	178	190	173
	Printing and Publishing Index	181	180	183
ODC	Magazine Advg.-Printer's Ink Index	403	379	342
	Retail Sales Combined Adjusted Index	379.4	372.9	349.1
	Drug Index	253.0	251.4	237.3
	General Merchandise Group Index	394.4	392.2	364.6
	Grocery and Combination Index	446.0	449.6	395.1
	Prices Index			
BLS	Consumers Price Index[1]	187.4	186.6	175.6
	Wholesale all Commodities[2]	178.2	177.6	169.1
	Wholesale Foods[2]	189.5	188.0	172.5
	Commodities other than Farm Products and Foods[2]	166.7	166.9	161.5
	Wholesale Pulp and Paper[2]	200.5	199.7	173.4
	Purchasing Power of Dollar, Consumers Prices[1]	53.4	53.6	56.9
	General Activity Index			
FRS	Mfg. Production-Worker Payroll	429.4	436.9	415.8
	Unemployment Compensation Initial Claims (M)	902	725	720
	Miscellaneous Carloadings–Thousands of Cars	1,664	1,967	1,673
	Electric Output (Million KW hr.)	37,775	35,296	34,338
PTJ	Average 32 P & P Common Stocks as of Jan. 19	$37.55	$37.43	$35.66

[1] 1935-39 = 100 Unadjusted Index.
[2] 1926 = 100.
[3] New 6-7 day basis.
[4] For details see APPA Monthly Statistical Summary—November 1951 Estimated Figures.
[5] Latest Month Available on Request.
x Revised figures.

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Paper TRADE JOURNAL

MacMillan & Bloedel Expansion

The expansion program being undertaken at the Harmac mill of MacMillan & Bloedel Ltd. near Nanaimo, B. C., is getting ino full swing. The original mill was opened in August, 1950, and has produced a very high grade of bleached sulphate since then. Now over $20 million is being invested in expansion, bringing the total value of the mill to over $40 million. This is expected to more than double the 250-ton daily output of the present unit; in fact the expanded production will probably exceed 550 tons daily.

Eight new digesters will be added to the four at present installed, permitting longer cooking, higher quality and shut-downs for repairs without loss of production.

The new warehouse is completed, giving a 250-foot extension for pulp and general storage. Work on the deep-sea dock is going ahead. An interesting design has been adopted to overcome the strong tides that made pile driving into fill unfeasible. Wooden forms will be lowered to the sea bottom (see illustration) where a bedrock base has been prepared. These forms will be piled on top of each other to form a cylinder which will then have a circular reinforcing lowered into it. Concrete will then be poured by the Tremie underwater concrete method, giving a solid pillar on which the bridge structure can be built. This project is being undertaken by Dominion Construction Co. and Dominion Bridge. Cost will be about $500,000.

Unique wharf construction necessitates lowering of circular wooden forms into the water. Cylindrical reinforcing is then placed inside the forms and concrete poured to form the pillars for the wharf construction.

The excavation for the new Flakt drier machine building at the Harmac mill of MacMillan & Bloedel is nearly completed. Recovery building is seen reflected in the surface water. The $20 million expansion will more than double the 250-ton daily output.

Additional water supply is to be obtained through a 50-inch wood stave pipe coming from an earth and rock fill dam at the headwaters of the Nanaimo River just below the Fourth Nanaimo Lake. H. A. Simons, consulting engineers are carrying out this part of the project and are consulting engineers for the whole expansion. The new water supply will involve an expenditure of about $2 million.

The whole plant will have to be expanded to take the production from the new digesters. The screen room capacity will be doubled as well as the high density and bleaching sections. A completely new recausticizing system and line kiln will be installed.

Boiler capacity will be increased and another recovery boiler added for steam generation and chemical recovery. This will generate about 120,000 pounds per hour. Recovery evaporators and precipitators will be added. A new stack will be needed and a change in the venting system will be installed.

A new blow tank is to be supplied by Dominion Bridge with Lundberg

of Seattle supplying the Rosenblad heat exchanger system.

The excavation for the machine room to house the new pulp drying machine is nearly completed. An illustration of the excavation with the recovery building and the present stack in the background accompanies this report.

Additional chip storage has been provided by the addition of three chip silos. These are now completed.

Early reports on a new and interesting method of pneumatic chip handling which is already in use at the mill have been investigated, and details of this equipment, in use for the first time, will be presented in an early issue.

The expansion project is expected to be completed in the late summer of 1953.

Benson Opens Office

Clyde A. Benson, associated for many years with Arno Nickerson in the consulting engineering field, has opened his own office at 32 Tallman Ave., Nyack, N. Y. Due to the ill health of Arno Nickerson, Arno Nickerson, Inc., was dissolved December 31, 1951.

Dissolve Albany Card Co.

ALBANY, N. Y. — A 90-year-old Albany area firm has ceased business operations, which included sales from coast to coast. Papers of dissolution for Albany Card and Paper Manufacturing Co., 95 Broadway, Menands, have been filed with the Secretary of State.

Holekamp Joins Pulpwood Assn.

The American Pulpwood Assn. is announcing the addition to its staff of James A. Holekamp as logging engineer. He comes to the association from the Coosa River Newsprint Co., Coosa Pines, Ala., where he served as woodyard shift foreman for more than two years.

Details of Celgar Development

Celgar Development Co. Ltd. will build two and possibly four mills near Castlegar, B. C. One of the largest single forest developments ever to be undertaken in B. C., the project will cost approximately $65 million. Construction will start as soon as engineering plans are completed, and it is expected that operations will be commenced within two years, depending on the availability of steel.

The Celgar Development Co. Ltd. is a subsidiary of the Celanese Corp. of America, which also controls the Columbia Cellulose Co. Ltd., which has established a new plant at Prince Rupert, and the Canadian Chemical Co. Ltd., which is developing a petrochemical and cellulose acetate plant at Edmonton. The Edmonton plant will be completed this year. The Columbia Cellulose plant at Prince Rupert represents an investment of over $40 million, and while officially started last May, is already being expanded.

The Celgar Co. has applied for a forest management licence covering three million acres extending along the Columbia River northward from Castlegar. This is the first time that large industrial operations in the forest industry have been developed in the hinterland of British Columbia.

According to announcement made jointly by Harold Blancke, president of the Celanese Corp. of America and its affiliates, and the Hon. E. T. Kenney, Minister of Lands and Forests, some two million acres of the three million acre wood tract for which a forest licence is being sought are in the non-productive mountainous area of Interior British Columbia.

The plans of the company call for a kraft mill to be built producing 400 tons of bleached and semi-bleached sulphate pulp daily and a groundwood mill with a daily capacity of 275 tons of newsprint. If the company's forest management licence application is approved a site for a 500-acre plant will be purchased on the Columbia River three miles west of Castlegar. It will have a frontage of almost three miles on the river and will be served by the Kettle Valley line.

The company will establish two mills which will employ approximately one thousand persons and it is estimated an additional 1200 men will be required for sawmill and logging operations.

The company is also considering the establishment of a plywood mill in the Castlegar area if sufficient peeling timber is found to make the operations of such a plant economically sound. Construction of a board mill for the utilization of waste from the pulp and paper sawmill operations is also under discussion and research is being carried out on the possible extraction of tannin from hemlock bark. Hemlock and spruce are predominant in the southern end of the timber area for which a forest management licence has been applied by the Celgar Co., while in the northern end cedar is the chief species. Research is also being carried out in connection with utilization of cedar in sawmill and shingle mill operations.

Power for the project will be supplied by the East Kootenay Power & Light Co., a subsidiary of the Consolidated Mining & Smelting Co. of Canada, and this will involve an expenditure of $63 million on power development. The power would come mainly from a $23 million hydro electric project at Pend Oreille, 25 miles south of Castlegar.

Mr. Kenney said the new development would be of vital importance to British Columbia, bringing the forests in the Interior of British Columbia into sharp focus. In the past, he said, these had been overlooked in favor of coastal timber stands. The development would provide for the cutting of a large volume of over-age timber that is now rotting in the woods in the licence area.

Mr. Kenney said logging and reforestation work will be under the supervision of provincial forest officials and the small operations in the area would be protected. He anticipates that the demand for low grade logs and sawmill waste created by the pulp plant would substantially benefit both logging and mill operators.

Following announcement in Vancouver of the new development, Mr. Blancke, accompanied by George Schneider, senior vice-president of American Celanese; K. C. Donald, vice-president in charge of foreign operations; and G. W. Seymour, an-

Deerfield Builds Mill in Canada

The Deerfield Glassine Co. has started construction on its new mill in Canada. This will be a one-machine mill but the building is being so constructed as to allow for future expansion. The 108" wide Fourdrinier paper machine is designed for glassine and greaseproof papers and other lightweight specialties and its estimated production is about 4,000 tons per year. The cost of the project is approximately one million dollars. The R. E. Stewart Construction Corp. are the contractors.

The name of the new concern is Canadian Glassine Co., Ltd. The mill will be located in Quebec City adjacent to the properties of the Anglo-Canadian Pulp and Paper Mills, Ltd., from whom the chief raw material, woodpulp, will be secured in slush form through a pipe line.

Anglo-Canadian will have a minority interest in the new concern and W. E. Soles will represent them on its board of directors. The rest of the directorate will consist of the directors of Deerfield Glassine Co. and the president will be Paul E. Hodgdon, the president of the Deerfield Glassine Co.

The sales of the production of the new mill will be in the hands of the Acer McLernon Co. of Montreal and it is expected that production will be started in June 1952. The mill is expected to employ 100 people.

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The increased volume of stock handled by hard working, fast running paper machines means increased volume of white water.

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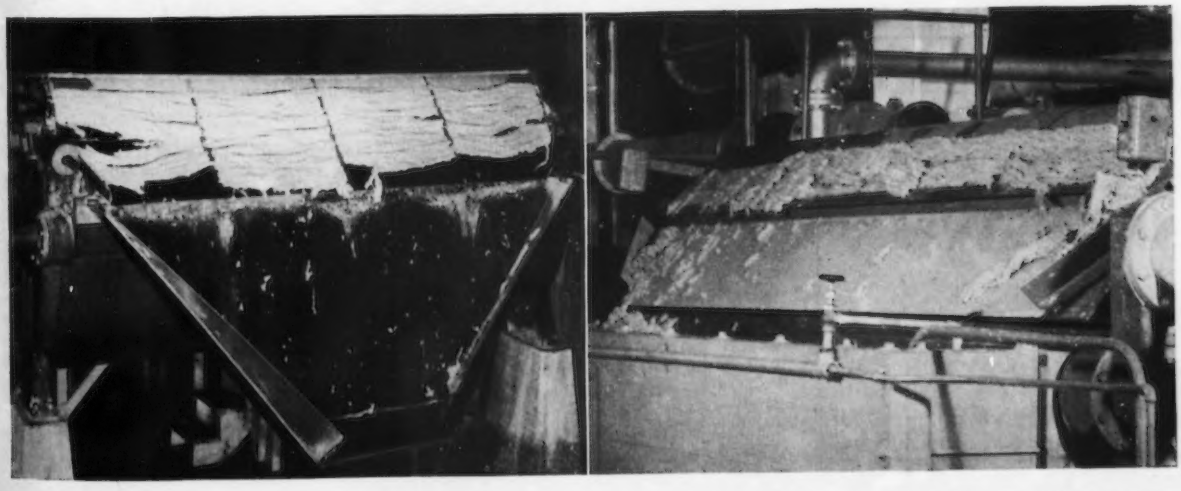

other vice-president, flew to the Prince Rupert development of the company where the new expansion is underway.

During the past ten years production of pulp in British Columbia has increased 193 percent. Newsprint production has been boosted 144 percent and production of other papers increased 196 percent. Three pulp mills in British Columbia are already expanding and a new mill is under construction.

The pulp and paper industry in B. C. is now employing approximately 5500 persons, and its annual payroll in the mills, apart from logging operations, is $18,300,000. In 1951 its production was valued at approximately $90 million, while sales of pulp and paper to the United States during the year were estimated at $60,500,000. The investment in pulp mill plant operations in B. C. is in excess of $250 million. There are ten different pulp and paper organizations operating in the province.

Elk Falls Nears Completion

Construction of the first unit of the $40 million newsprint mill of the Elk Falls Co., Duncan Bay, Vancouver Island, approximately 100 miles northwest of Vancouver by water, is now rapidly nearing completion, according to Paul E. Cooper, vice-president of the organization. Scaffolding is being pulled down from the buildings and the assembly of the paper machines has been completed. Auxiliary equipment, as well as piping and electrical equipment installation, is in progress. The equipment is being received in 480 by 87 foot warehouse, which is being completed adjoining the paper machine room. The repair shop and store house has been completed and is already in use in connection with construction operations.

The steel frame for the boiler house has been erected and the two boilers will develop 650 pounds of pressure and supply 85,000 pounds of steam per hour.

Concrete work for the hog building and foundations for the hog fuel conveyors are completed, a 400 foot long main deck and a 360 foot storage shed are finished and are now in use. Steel is being erected for the wood room and the log haul is ready for steel work. A car ferry slip has been completed and already over 250 freight cars have been handled. A scow dock has been equipped with a crane for hog fuel handling.

A.P.W.

ONLIWON

INDUSTRIAL
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TISSUE

The 25,000 horsepower required for the mill will come from the John Hart development of the British Columbia Power Commission at nearby Campbell River. It will be delivered at 138,000 volts and stepped down to 13,800 volts. Water for the mill will be pumped from the Campbell River through nearly three miles of 36-inch wood stave pipe. The pipeline has a capacity of twenty million gallons of water per day.

The Elk Falls Co. is a partnership formed by Pacific Mills Ltd. and Canadian Western Lumber Co. and the mill is the largest of its type at present under construction in North America. Its initial production of 240 tons per day will get underway during the coming year.

Technical information regarding the plant is as follows:

Paper Machine—Made by Dominion Engineering Co., Ltd., Montreal; is 284 inches wide; designed to operate at 2000 feet per minute. It is equipped with a Pressure Inlet Slice; an automatic removable Fourtrinier; has a 54-inch diameter couch roll; two 38-inch diameter rubber-covered press rolls; and automatic broke conveyors.

The dryer section is of 50 main dryers and 10 felt dryers, running on anti-friction and Michell pad bearings, lubricated by a high-pressure system operating from a 6000-gallon receiving tank.

The calender stack is of eight rolls, has a 40-inch diameter bottom roll weighing 54 tons, running on high-speed babbit; has 20-inch diameter intermediate rolls weighing 12 tons each. All last seven rolls running on anti-friction bearings, lubricated from the high-pressure system.

The reel has 48-inch diameter drum, with adjustable shower, and is designed to make a 61-inch diameter reel.

This machine also has a modern high-speed winder designed to take 61-inch diameter reel equipped with a hydraulic lowering table, plus several other attachments.

(Half of the paper machine is now at the mill site; several sub-assemblies have been started; and setting nearly half of the sole plates has been completed.)

Warehouse—480 feet by 87 feet; adjoining the machine room.

Repair Shop—200 feet by 72 feet.

Boiler House—98 feet by 72 feet. Two boilers to be supplied by Combustion Engineering Co., will develop 650 pounds of pressure and supply 85,000 pounds of steam each per hour.

Stack—150 feet high; 12 feet in diameter.

Woodroom—146 feet by 71 feet.

Electrical Power—to supply the mill's 25,000 connected horsepower will come from the John Hart power development. This is delivered at 138,000 volts stepped down to 13,800 where it enters the mill.

The three main grinder meters are Westinghouse, 5500 hp. each at 13,800 volts; the remainder of the motors are 2300 and 550 volts; supplied from five sub-stations distributed throughout the mill.

The paper machine is driven by Harland Drive; the d.c. motors of this drive are supplied by 1200 k.w. turbo-generator, located in boiler house. All equipment is controlled from central panels.

Water—Water for the mill will be pumped from the Campbell River, through nearly three miles of 36-inch wood-stave pipe. The pipeline is capable of conveying twenty million gallons of water per day. The water will be pumped by 250 hp. pumps, each capable of delivering 4000 g.p.m. to a steel surge tank and flow by gravity from there to the mill.

Within 3000 feet of the mill, the water will pass through a 400,000-gallon, wood-stave storage tank.

Power for the pumps is transmitted along the pipeline right-of-way from a sub-station at the mill.

Main Dock—400 feet by 64 feet.

Storage Shed—360 feet by 30 feet. (Depth of water at low tide is 30 feet.)

Car Ferry Slip—To date, 250 freight cars have been received at the project site and handled on the 4000 feet of trackage.

Scow Dock—200 feet by 40 feet; equipped with a Colby Crane to handle hog fuel.

Marathon Chlorine Plant Nears Completion

Marathon Corp.'s chlorine plant, which is part of the company's "complete integration program" is nearing completion at its Ontario property where 113,000 tons of pulp were made during the 1951 fiscal year. This new installation will reduce per ton cost of pulp as well as ensuring chlorine, caustic and sodium sulphide supply.

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TRENT TUBE COMPANY, GENERAL SALES OFFICES, EAST TROY, WISCONSIN

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GOVERNMENT GOSPEL

CPR 108 Correction

1. Section 3 (b) (1) (iii) is corrected to read as follows:

(iii) No differentials for bending or sizing gypsum lath liner board or gray back gypsum liner board may be added to the listed base prices in this pricing table.

2. Section 3 (b) (2) (iii) is corrected to read as follows:

(iii) No differentials for bending or sizing cream faced gypsum liner board may be added to the listed base price in this pricing table.

3. The ninth item in the pricing table in section 4 (a) (1) under the heading, "Base price per M sq. ft.," which reads "4.18," is hereby corrected by striking out the figure "4.18" and inserting in its place the figure "4.23."

Amend Basic Priorities Rule

Stocks of primary paper and paperboard have improved sufficiently to warrant the suspension of the use of all DO ratings except six reserved exclusively for the military and Atomic Energy Commission and for the filling of machine tool orders.

In an amendment of Direction 3 to NPA Regulation 2, the symbols A, B, C, E, Z-1 and Z-2 are named as the only ones valid for procurement of paper and paperboard products.

The amendment also expands the list of DO ratings which may be used to obtain basic chemicals by adding the Z-1 and Z-2 "machine tools" symbols.

Because most primary paper stocks are in fair supply and producers are able to fill most orders, the need for priorities has been decreased. The few remaining applicable DO's will assure that the military and AEC get their supplies on time, NPA explained.

While chemical supplies have not improved to this extent, the military and AEC symbols (A, B, C and E) remain applicable and the "Z" symbols are now valid to assure the acquisition of chemicals for direct defense needs in the same way.

More Swedish Pulp to the U.S.

It is expected that more Scandinavian pulp will shortly become available for the U. S. market, possibly at some price concession. Swedish agents had been led to expect 65 percent of contract tonnages—in contrast to the 50 percent shipped here during late 1951.

Though closed water season shortly will arrive, it is believed that more than this 65 percent will ultimately be offered to regular accounts.

Inasmuch as more U. S. and Canadian pulp steadily is becoming available, capacity increasing, inventories climbing, and demand easing, there is reason to believe that some easing in Scandinavian prices might be in the offing, both to U. S. and British buyers.

Doubtless some will argue that bleached pulps are still tight, the inventory position weak. To which industry students will counter that this quarter's lesser paper demand and new capacity will change that position rapidly.

Newsprint Report Delayed

WASHINGTON, D. C.—The Pulp and Paper Committee of the International Materials Conference hopes it can shortly announce results of its current discussions regarding newsprint, the agency reported this week. Due to holidays, there has been little definite action, it was indicated.

No Immediate Tax Change

OTTAWA—Canada's pulp and paper industry will not have to be confronted with any new taxes until the spring at least, if then, since the Canadian Government has announced officially that it does not intend to bring down any tax changes whatsoever until the next federal budget to be delivered here in the spring.

CPR 116—Special Paperboard, Food Container and Closure Paperboard

The OPS has issued a tailored regulation for the food container and closure paperboard industry which establishes manufacturers' ceilings at current market levels in conformity with requirements of the Capehart Amendment.

The new regulation, CPR 116, effective January 19, 1952, fixes as ceilings the prices in effect during the 45 day period ending January 11, 1952.

One of the alternatives authorized by the Capehart Amendment to the Defense Production Act is establishment of ceilings at market levels prevailing immediately before issuance of a regulation.

The new regulation supersedes the General Ceiling Price Regulation, GCPR, and the Manufacturers' General Ceiling Price Regulation, CPR 22, and applies to foodboard made in the Continental United States used in the manufacture of milk cartons, cups, lids, meat trays and other containers for liquid, moist and oily foods.

There is a wide variety of pricing practices and products are tailored to customer specification. Consequently the establishment of dollars-and-cents ceiling prices was found impractical.

Under the provisions of the regulation a manufacturer is frozen at the prices he had in effect during the base period, which is the 45 day period ending January 11, 1952, including differentials for his various classes of customers. He is also frozen as to the differentials he employed during his base period for quantities and for special characteristics, such as special caliper, strength, roll dimensions, sheet size, finish, sizing, color, brightness, wrapping warehousing or handling.

The same freight allowances as granted during the base period must also be maintained.

Manufacturers must, within 45 days of the effective date of the regulation, file reports of their differentials and freight allowances employed during the base period.

A manufacturer may apply to OPS for establishment of a ceiling price on foodboard not specifically covered by the regulation or not made by him during the base period.

The application must state prescribed particulars, including a description of the product, proposed price, comparison of the costs with the most comparable grade made by the manufacturer, and an explanation why the proposed price is in line with other prices established under the regulation.

The manufacturer may sell at the proposed ceilings after 15 days if in the meantime OPS does not act to establish a price, subject to non-retroactive revision by OPS.

The grades of foodboard covered by the regulation are:

1. Milk Carton, Type I.
2. Milk Carton, Type II.
3. Liquid Tight Container Sidewall Stock.
4. Two Piece Cup and Round Nested Food Container Stock.
5. Milk Bottle Plug Cap and Liquid Tight Container Top and Bottom Stock.
6. Milk Bottle Hood and Lip Cover Stock.
7. Cup Lid Stock.
8. Solid Bleached Carton Stock.
9. Double Bleached Lined Carton Stock.
10. Single Bleached Lined Carton Stock.
11. Solid Wood Pulp Board.
12. Meat Board and Meat Tray Stock.

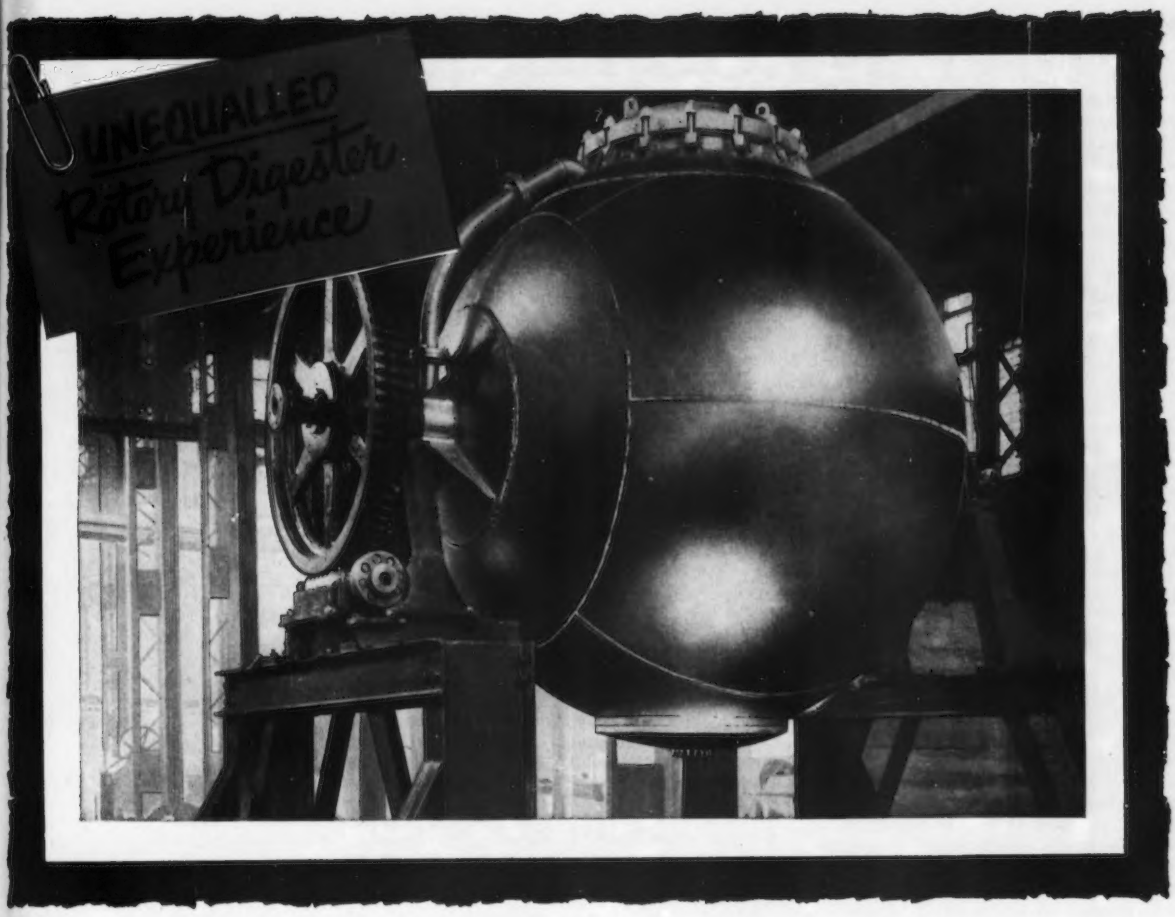
Chlorine M-31 Amended

The NPA has amended its basic chlorine order M-31 to make the provisions of three sections of the order effective for the calendar year 1952 instead of 1951.

The order, issued January 23, 1951, was designed to assure chlorine supplies for public health needs and to provide for equitable distribution of defense-rated orders among chlorine producers.

This action affects those sections of the order concerned with chlorine deliveries for public health purposes. No change other than the substitution of "1952" for "1951" with respect to delivery dates is made in any of the provisions or requirements of the order.

Further information may be obtained at Department of Commerce field offices.



Biggs pressure vessels meet all paper industries requirements

THE trend to the semi-chemical pulping process is based on long term experience. Pulping mills have discovered that when the semi-chemical method is used, in conjunction with a globe rotary digester, lower cooking pressures will do the job in shorter cooking cycles. This is an important two-way savings.

They have found, too, that less equipment is required. In fact, costly liquor recovery systems are eliminated. The spent liquors can be used for unbleached stock, and because waste is held to a minimum, stream pollution is substantially reduced.

Biggs pioneered the Globe Rotary Digester. Since early in their existence — which began in 1887 — Biggs has worked with the Pulp and Paper Industry in designing and manufacturing equipment that will produce better papers at less cost.

For more information regarding the latest in digester equipment, or for engineering data contact The Biggs Boiler Works Co., 1015 Bank Street, Akron, Ohio.

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Paper Shipping Sacks Regulation

The OPS issued a tailored regulation for the paper shipping sack industry which freezes prices of individual manufacturers at the levels established by the General Ceiling Price Regulation, GCPR, except for minor increases on products made from 40 pound kraft shipping sack paper.

The new Regulation, CPR 115, effective January 19, 1952, covers paper shipping sacks produced and sold in the United States and its Territories and possessions. It freezes the manufacturer's price list or formula, or both, as used in pricing during the base period of January 25 to February 24, 1951, subject to the prescribed adjustments.

Ceilings established under the new regulation will be at approximately present price levels.

The adjustment allowed for 40 pound kraft shipping sack paper, it is estimated, will not increase prices more than one-half of one percent on the average. Increases which do occur in practically every instance will be absorbed by consuming industries and not passed on to the ultimate consumer.

The adjustments will reflect changes in the ceiling price of 40 pound basis weight shipping sack kraft paper permitted by Ceiling Price Regulation 88, issued October 23, 1951, which covers unbleached kraft paper. Paper of this weight is used in about one-third of the industry's production by volume, but the indication is that this percentage is being reduced as manufacturers utilize more of the heavier weights.

Manufacturers of paper shipping sacks have historically priced by price formulas or price lists, or both, the majority of production being priced by formulas.

For products sold against price lists, manufacturers may add 0.45 percent for each wall or sheet of 40 pound kraft paper used in the sack to the base list price, before additions of differentials covering printing, quantity and other particulars.

In computing ceilings by formula, the manufacturer may add to his formula a basis weight factor for each wall or sheet of 40 pound kraft used. On carload orders this factor is .009 and for less than carload orders .010. The factor is not an amount or a percentage of the total price, but rather is an index figure allowing each manufacturer to adjust his individual formula by an amount reflecting the increased cost of 40 pound basis weight paper actually used. The adjustment by formula is in line with the percentage adjustment for price lists.

Ceiling prices so computed must be rounded out to the next lowest multiple of 5 cents per 1,000 sacks.

The manufacturer must maintain differentials, extra charges, delivery practices, and discounts for terms of sale employed during the base period.

Within 30 days of the effective date of the regulation, manufacturers must file their base period price lists and formulas. They must also file revised price lists and formulas 5 days prior to applying the 40 pound differential.

Chlorine Expansion Goal

A goal of annual domestic production of 3,430,000 short tons of chlorine by 1955 was announced by Ralph S. Trigg, Deputy Administrator of the DPA for Program and Requirements.

This is an increase of about 1,230,000 tons over capacity in 1950, Mr. Trigg said. A small increase in capacity which is being made without Government assistance, and a larger increase by companies which already hold certificates permitting rapid tax amortization will, however, fully provide for the increase as established by the goal.

2nd Quarter 1952 Allotments of Controlled Materials

General Claimants	Total Steel (Tons)	Total Copper & Copper Base Alloys (000 lbs.)	Total Aluminum (000 lbs.)
Estimated Supply	21,810,500	1,391,000	705,000
Department of Agriculture	52,105	1,376	87
Department of Army	32,560	1,392	194
Atomic Energy Commission	118,790	7,673	5,553
Civil Aeronautics Administration	20,098	1,222	194
Defense, Department of	2,617,361	309,940	278,190
Defense Electric Power Administration	339,650	62,009	58,212
Defense Fisheries Administration	712	26	....
Defense Minerals Administration	39,250	1,605	340
Defense Solid Fuels Administration			
Coal Mine Construction	12,790	259	19
Coke Oven Construction	26,710	321	2
Defense Transport Administration	74,855	2,133	146
Federal Civil Defense Administration	5,106	74	39
Federal Security Agency			
Education	128,279	5,354	8
Hospitals	75,850	2,723	388
General Services Administration	27,437	1,007	81
Housing & Home Finance Agency	78,600	3,011	48
Department of Interior	9,308	232	48
Maritime Administration	121,100	2,950	194
OIT-ECA	669,484	10,114	1,746
Petroleum Administration for Defense	1,710,735	7,775	1,240
Public Roads, Bureau of	251,525	592	172
Veterans Administration	12,655	1,278	141
Total	6,424,600	423,066	347,042
National Production Authority Divisions			
Agr. Mach. & Impl. Division	541,822	9,272	7,429
Aircraft Division	16,181	1,502	8,781
Aluminum & Magnesium Division	15,625	....	5,346
Building Materials Division	849,263	51,156	46,494
Canadian Division	467,050	3,731	1,843
Chemical Division	115	881	2,970
Communications Equipment Division	43,400	43,588	2,620
Construction Machinery Division	456,179	6,046	1,731
Consumer Durable Goods Division	872,180	34,584	48,030
Container & Packaging Division	1,526,396	288	19,561
Copper Division	42,150	3,602	1,746
Electrical Equipment Division	655,261	164,695	31,382
Electronics Division	58,900	30,803	12,244
Engines & Turbines Division	588,330	30,893	3,299
Facilities Bureau			
Construction Controls	18,010	504	....
Industrial Expansion	583,938	29,340	10,890
General Components Division	1,203,225	182,456	21,004
General Industrial Equipment Division	532,568	40,860	15,369
Iron & Steel Division	211,082	3,955	116
Leather & Leather Products Division	9,833	387	388
Lumber & Wood Products Division	6,076	131	822
Metalworking Machinery Division	652,535	32,357	8,464
Mining Machinery Division	135,518	3,769	269
Miscellaneous Metals & Minerals Division	3,561	2,351	82
Motion Pic. Photo. Products Division	7,601	971	2,710
Motor Vehicles Division	3,009,760	106,683	59,400
Ordnance & Shipbuilding Division	105,150	9,672	928
Printing & Publishing Division	4,700	1,058	459
Pulp, Paper & Paperboard Division	1,001	41	26
R. R. Equipment Division	1,599,141	84,320	4,684
Rubber Division	32,395	3,588	954
Scientific & Technical Equipment Division	49,952	39,853	13,541
Service Equipment Division	43,813	2,695	3,881
Water Resources Division	220,415	3,131	368
Total	14,563,126	929,163	337,831

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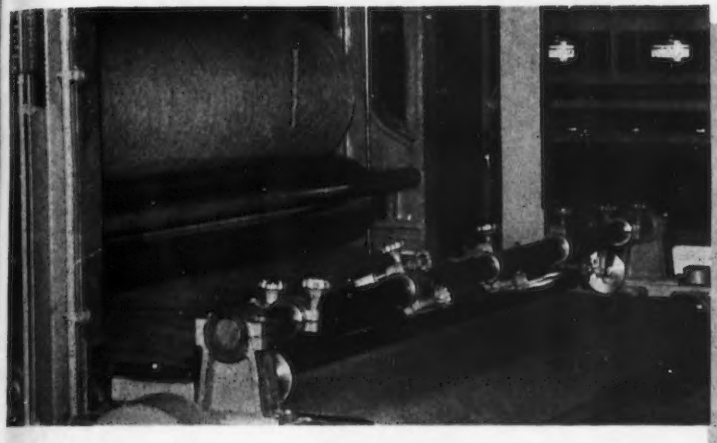

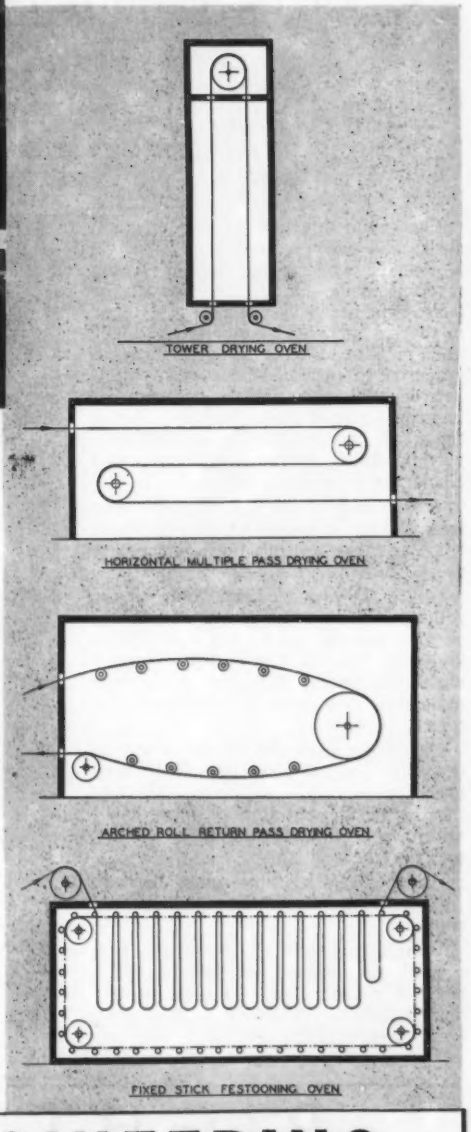
TOWER DRYING OVEN
HORIZONTAL MULTIPLE PASS DRYING OVEN
ARCHED ROLL RETURN PASS DRYING OVEN
FIXED STICK FESTOONING OVEN

Treated material must come out uniformly dried

Whether your problem is the evaporation of water or solvents, the efficiency of your drying apparatus determines the effectiveness of all other treating operations. Only by careful synchronization of the right treating and drying units can waste of materials, heat, labor and time be avoided.

Selecting the proper dryer involves careful consideration of such factors as heat source, rate of drying, heat load, air circulation, explosion hazards and method of handling. A variety of dryer designs are available from which to make the right selection, and ROSS engineers with the experience of 30 years at their command are available to advise you in determining your exact drying requirements.

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MAINTENANCE—XV OF SERIES

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Check the pressure of the blade on the roll. Do not permit application of pressure in excess of that built into the doctor construction or beyond the minimum applied by the pressure link to keep the roll clean.

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Watch the wear of the blade, getting all the service you can out of it but not permitting it to wear to the point where the retaining clips or pressure plate touches the roll or the increased angle becomes too great. Replace the blade when it wears down to ¼" of the spring plate or fingers.

Don't drop the Doctor onto the roll. See that it's applied gently.

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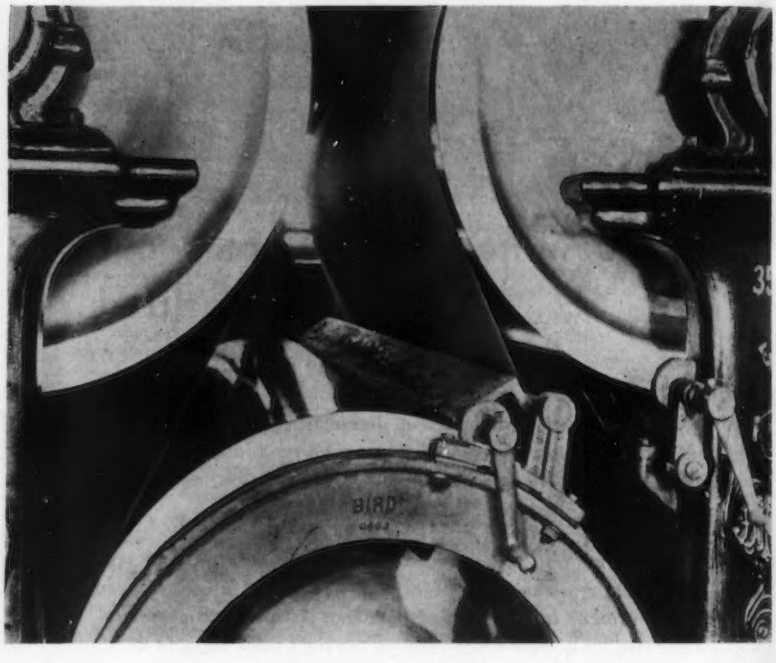
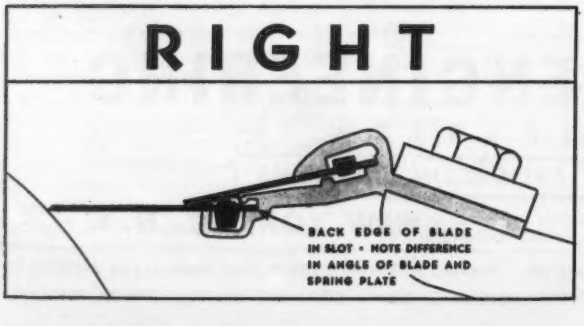
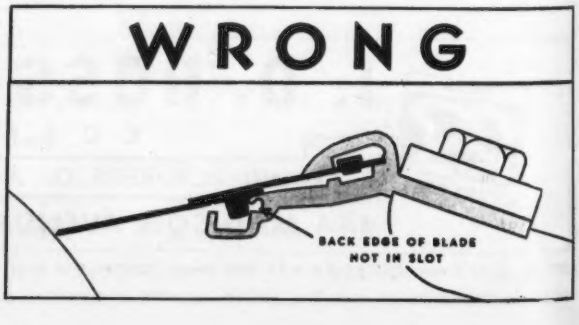


A Vickery Doctor on a dryer





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BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

Utilization of Barks in Hardboard

Dr. A. B. Anderson and William J. Runckel
Oregon Lumber Co., Research Laboratory

Various barks, including Douglas fir, white fir, and western Hemlock were used to make hardboard. A quality hardboard was produced from Douglas fir slabwood including the bark. White fir and hemlock barks also produced boards with acceptable properties. The new process can be used in a conventional wet hardboard process plant.

The advantages of the slabwood process are: (1) cheap, plentiful raw material, (2) less power required for pulping, (3) no chemicals are needed with Douglas fir bark to produce hardboard with satisfactory moisture resistance and dimensional stability.

In general, bark resulting from debarking of pulp wood or bark in the form of slabwood in lumber mills is used as fuel to generate power for the mill. Bark and slabwood are also sold locally for domestic fuel. Many of the lumber mills in California, Oregon, Washington, and western Canada find that their own fuel requirements are supplied by mill waste other than slabwood. And since there is so little domestic market for this material, it is common for mills to burn slabwood.

In 1948, the Oregon Lumber Company began to investigate the possibility of using slabwood as a raw material for manufacturing hardboard. Up to this time very little information had been made available regarding the use of barks in the production of hardboard (1) The barks studied were Douglas fir, white fir, and western hemlock—the varieties processed at the Oregon Lumber Company mill. Douglas fir predominated.

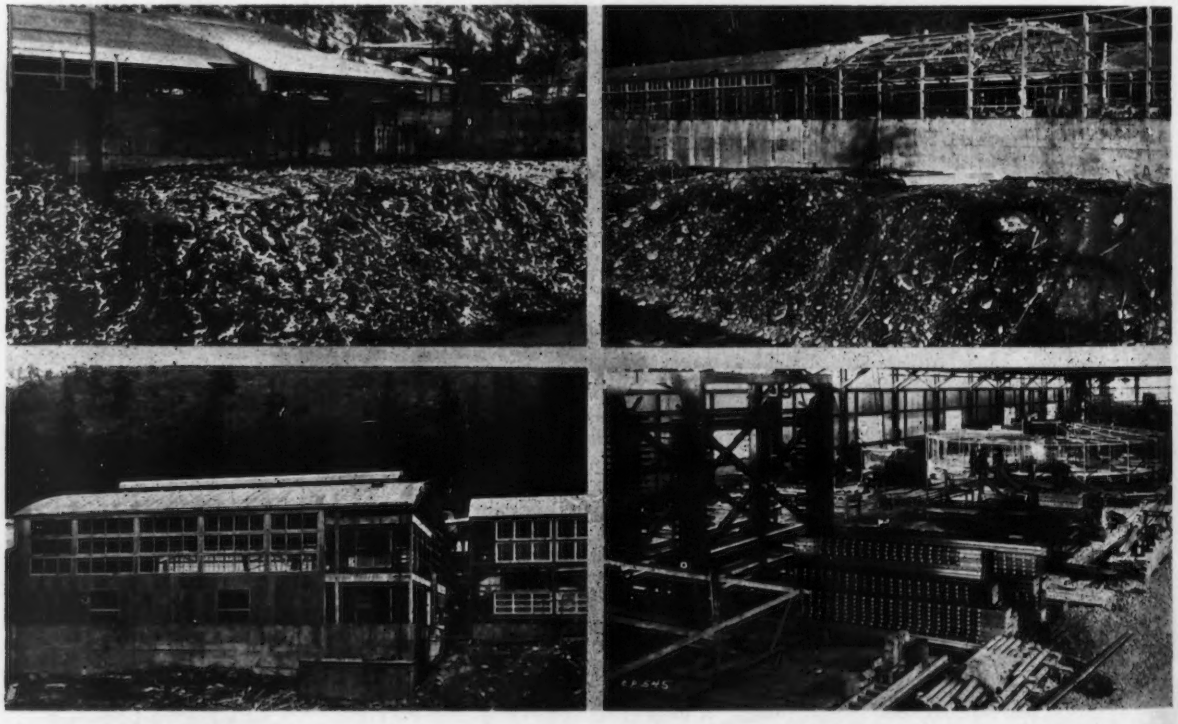
In the commercial production of hardboard, bark-free raw material has always appeared to be essential. The reasons advanced in the past for not using bark in fiberboard compositions are: 1—when bark is incorporated with wood, the resultant pulp is slow and consequently unsuitable for wet lap forming machines, and 2—the use of bark weakens the board below commercial standards.

EXPERIMENTAL PROCEDURE

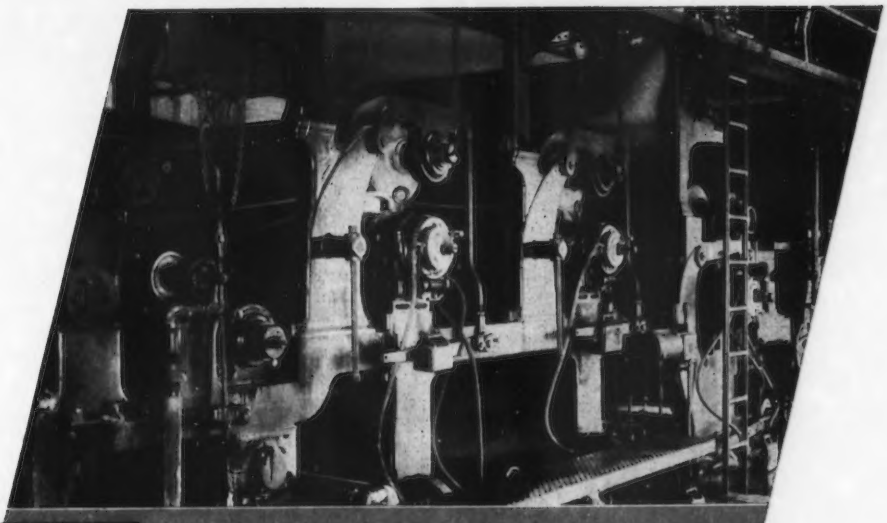
Preparation of Bark-wood Pulp

The lumber mill furnished slabs cut into 4′ lengths. These were split into 2″ and 3″ widths and the bark was removed. The bark was put through a small hammermill which had a perforated plate scren with 1″ holes. The reduced bark was then ready to be mixed with wood chips for pulping. The wood chips were prepared from the bark-free wood by passing them through a laboratory chipper and then through the hammermill. After combining bark chips and bark-free chips, the mixture was put on a ¼″ mesh screen to remove the fines which were discarded. The chips retained by the screen were used to make hardboard.

Bark-wood mixtures were weighed out in various percent compositions to make from six to eight ¼″ x 12″ x 12″ hardboards. Each experimental run required from 9 to 13 lbs. of dry material. Warm water was added to the



Upper left—Hardboard plant in process of construction at Dee, Oregon, looking southeast. Upper right—Hardboard plant in process of construction at Dee, Oregon, looking northeast showing west wall and superstructure. Lower left—Hardboard plant in process of construction at Dee, Oregon, looking northeast showing south end of process building and chipper house. Lower right—Hardboard plant in process of construction at Dee, Oregon, looking northwest showing hot press unloader and humidifier.



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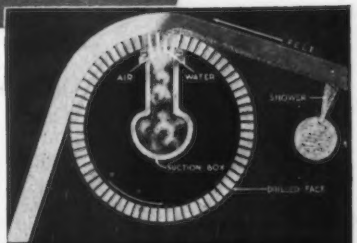
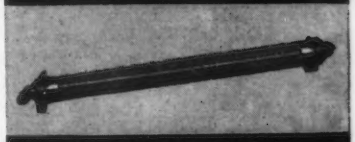


Cross section of a typical Downingtown Suction Felt Roll



Downingtown Suction Felt Roll showing location of the suction box

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chip mixture before defiberization in an Asplund laboratory defibrator. A preheating chamber consisting of a vertical stainless steel pipe (3″ ID by 12″) was connected to the defibrating chamber by a 2½″ stainless steel pipe with a quick-opening valve. A charge equivalent to approximately 300 grams of dry material was placed in the preheater, and the chamber was closed by means of a screw cap. The chips were presteamed for 5 minutes (final pressure about 90 psig).

Then the defibrator motor was started and the chips were discharged into the defibrator chamber through the quick-opening valve. Steam was admitted to the defibrator chamber and the charge was held for one minute. It was then blown through a ¾″ line into a cyclone where the coarse fibers were collected. This procedure was repeated until all the material for a particular run was defiberized.

The defiberized material was then pulped in an 8″ Bauer laboratory disc mill using No. 6946 plates at various plate clearances to produce pulps of desired freeness. While the coarse fiber was being pulped, a small stream of water (70°—90°F) was continually fed to the mill. The Oliver freeness of the stock was determined at this point. The most suitable stock for commercial board-forming machines has an Oliver freeness between 35 and 60 seconds. No difficulties were encountered in preparing bark-wood pulps within these limits of freeness. Usually when bark is used in wood pulp compositions the Oliver freeness value does not meet the desired specification.

Preparation of Hardboard

The pulp from each run was divided into 6 to 8 parts according to the number of ¼″ boards to be made. Each portion of pulp was dispersed in water (Consistency about 6%) and transferred to a forming box 12″ x 12″ with a facing screen of 14 x 14 mesh .025″ wire. The pulp was stirred lightly and the water was allowed to drain through a quick-opening valve. Then the valve was closed and vacuum applied to remove additional water. The wet mat was removed and placed between screens and stainless steel cauls (13″ x 13″). Then the mat and screens were put in a 42-ton capacity, 12″ x 12″, hydraulic press with platens at room temperature. The wet lap was submitted to 500 psi for two minutes. This reduced the water content of the mat to 50% plus or minus 2%. Each mat was then weighed to determine the approximately dry weight of pulp recovered from each run. A composite sample of these cold pressed mats totaling 150 grams (dry) was used to determine Oliver freeness.

Each cold-pressed mat was divided into equal parts corresponding to the number of boards to be made from the particular test-run to insure uniform stock for each board to be processed. The pulp was weighed out into samples of 1150 to 1175 grams. It was put into an 8% to 10% consistency and thoroughly stirred with a pulp mixer for 10 minutes. If the board were to be sized, the rosin size would be added at this point and stirred for 10 minutes and then an equivalent quantity of papermakers alum would be added and stirred an additional 10 minutes. The pulp mixture was then poured into the 12″ x 12″ forming box and water was added to about 4% to 6% consistency. This was carefully stirred and the water allowed to drain. When free drainage ceased, vacuum was applied until the gauge indicated 5″ Hg., or less. The mat was removed and a 13″ x 13″ stainless steel caul plate, lubricated with silicone mold release compound, was placed on top of the mat; a screen-caul plate was placed on the under side.

The prepared mat was transferred to platens which had previously been electrically preheated to a temperature either 375° or 410°F. The temperature of the platens were automatically controlled by a thermo regulator. The platen pressure was raised to 500 psi and held at this pressure for two minutes. Then the pressure was slowly released to 50 psi to permit entrapped steam to escape. This breathing cycle was maintained for 2 or 3 minutes. Then the pressure was increased to 500 psi. The final pressure was sustained for 10 to 15 minutes depending on the properties desired. At the end of the cycle, the pressure was dropped and the board was removed for testing. *NOTE:* This pressure cycle of 500-50-500 psi for 2-3-15 minutes was arbitrarily chosen and was used throughout to be consistent. However, in actual operation other cycles could be used with satisfactory results, i.e. 500-0-500 psi for 2-2-10 minutes.

PHYSICAL TESTING METHODS

Oliver Freeness of Pulp Stocks

A composite sample weighing 150 grams (dry) from the cold pressed mats was thoroughly stirred in about 8 quarts of water with a mechanical pulp breaker. This was transferred to an Oliver test leaf (½ sq. ft. area) and more water was added to increase the stock to 14 quarts. The facing screen was 14 x 14 mesh .025″ wire as used on commercial forming machines. Vacuum was applied. When 15″ Hg. was reached, the quick-opening valve leading to the test leaf was opened. The time required for all free water to disappear was recorded. The end of timing (in seconds) was the instant the surface of the pulp changed from shiny to dull. The time required to drain the liquid from 14 quarts of stock through the Oliver test leaf was 25 seconds—well below the maximum time required for satisfactory commercial operation.

Modulus of Rupture

Each 12″ x 12″ hardboard was edge-trimmed on a table saw. A strip 3″ wide was taken from the center of the board to be checked for modulus of rupture. This test was performed in accordance with Federal Specification LLL-F311, July 12, 1940.

Water Absorption and Swelling

Two 3″ x 5″ samples were cut from each board and used to determine the water absorption and the degree of swelling after being immersed in water. The edges of one of the samples from each board was sealed with melted paraffin. The thickness to the nearest .001″ and the weight to the nearest 0.1 gram was recorded for each sample. The samples were then soaked under one inch of water at room temperature for 24 hours. At the end of this period the samples were removed from the water and placed on end for about 10 minutes to allow the free water to run off. The surfaces were wiped with a dry cloth and the samples weighed to the nearest 0.1 gram. The absorption was calculated as the gain in weight over dry weight and recorded in percent. (In all data reported here, the (a) sample has sealed edges and the (b) sample has unsealed edges.) The thickness also was determined and the increase in thickness over the dry thickness was calculated and the amount recorded in percent.

Specific Gravity

Specific Gravity was determined on samples approximately 3″ x 5″ according to the method described by Forest Products Laboratory, Madison, Wisconsin, Report R1712 *(2)*.

EXPERIMENTAL BARK-WOOD HARDWOOD RUNS

Effect of Barks on Board Properties

The percent by weight of bark was determined on various shipments of slabwood received from the mill to determine the approximate percent of bark occurring in the slabwood received from day to day. The amount of bark found on Douglas fir slabwood averaged about 45% by dry weight. White fir and western hemlock slabwood had about 35% bark. To determine the effect of these various barks on board properties, bark-wood compositions containing 35% of each dry weight using respective wood species with each bark used were prepared. Six boards were prepared from each of these three runs. Three boards of each run were prepared with 1% rosin size plus 1% papermakers alum (based on dry weight of the board). The remaining three boards were processed without sizing agents. All boards were hot pressed at 375°F platen temperature using pressing cycle of 500-50-500 psi for 2-3-15 minutes respectively. The properties of the resulting boards are given in *Table I.* (The results cited are averages of two or more boards in this and subsequent tables).

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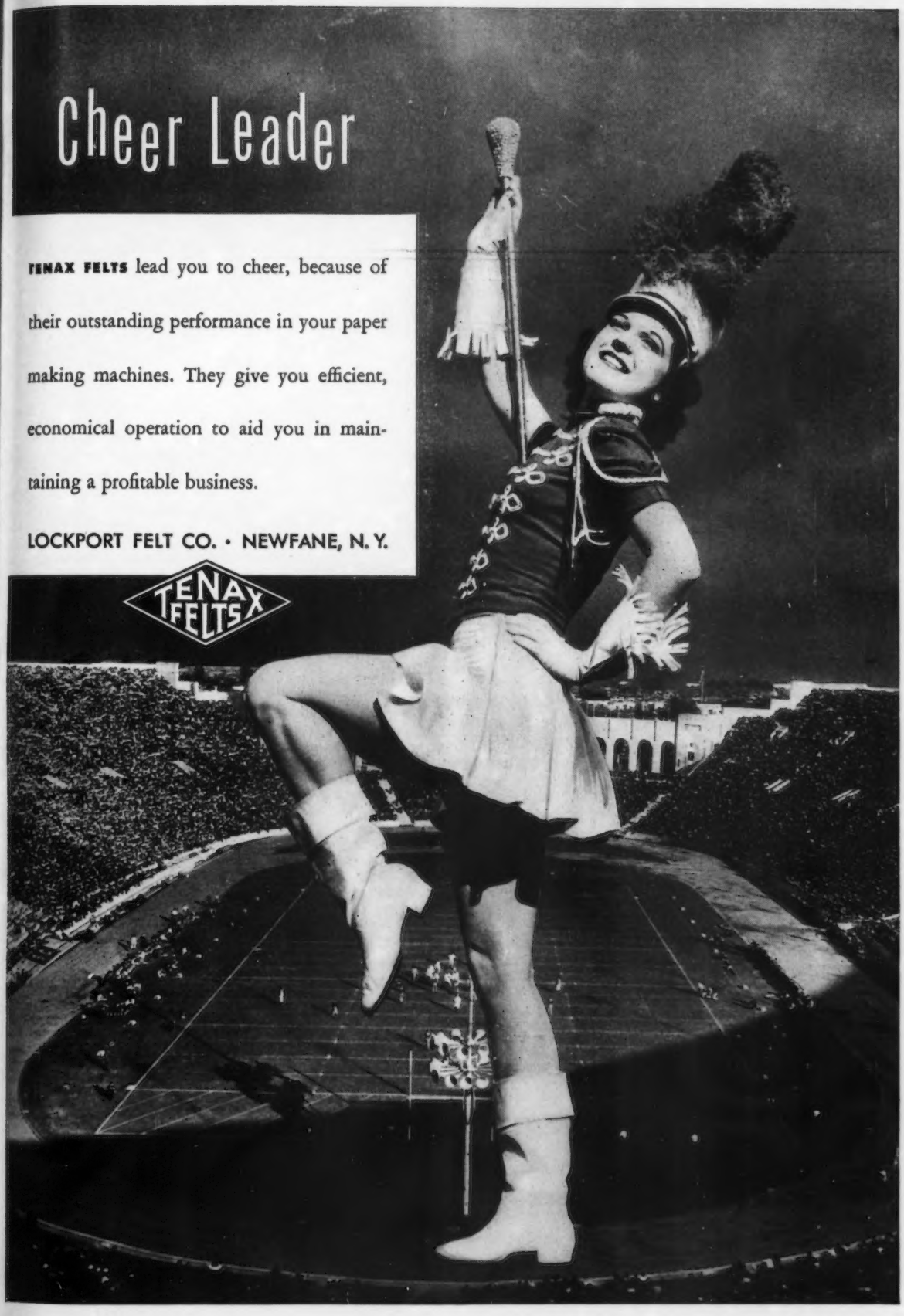

TABLE I

35% Bark	Freeness, secs.	Pulp Yield, %	Size, %	Spec. Grav.	Caliper, ins.	Absorption, % (a)	Absorption, % (b)	Swelling, % (a)	Swelling, % (b)	Modulus psi.
Doug. F. ..	34	89	0	1.060	.223	8.2	10.9	5.2	6.5	6385
Doug. F. ..	34	89	1	1.052	.214	5.7	8.6	5.7	8.6	4570
White F. ..	37	88	0	0.940	.242	65.1	64.3	36.5	34.5	5185
White F. ..	37	88	1	0.945	.251	16.4	19.2	9.2	13.2	3300
Hemlock ...	40	89	0	0.977	.233	56.2	54.7	29.5	24.3	5030
Hemlock ...	40	89	1	0.998	.240	11.4	16.4	6.7	9.7	4300

(a) Sample had sealed edges. (b) Sample had unsealed edges.

500-50-500 psi for 2-2-10 minutes respectively. The properties of the resulting boards are shown in *Table IV*.

Note that even as little as 15% Douglas fir bark imparts relatively low water absorption values to the board. Also note that 25% to 45% bark compositions produce boards of comparably low water absorption and high dimensional stability. The varying amounts of bark used do not materially affect the strength of the boards. The color variation of boards containing different percentages of bark is hardly perceptible. Thus it appears that a wide latitude in bark-wood ratio can be permitted, and boards having properties well within commercial specifications can be produced.

Douglas fir bark hardboard even without sizing agent has a very low water absorption, only slight swelling after immersion, and excellent strength properties. Also note that the Oliver freeness of all the bark-wood pulps are well within the range recommended for commercial forming machines (i.e. 30-65 seconds Oliver freeness). Thus, when bark-wood compositions are pulped as carried out in this experiment, the freeness of such stocks is satisfactory for commercial operations. Also note that the boards with sizing added are considerably lower in strength than the corresponding unsized bark-wood boards. This action of size was noted repeatedly in this investigation even with 100% wood fiber hardboards.

100% Wood Fiber Boards

The above runs were repeated using each of the wood species without bark to obtain results which could be compared with the bark-wood hardboards prepared under similar conditions. The platen temperature used was 375°F and the pressing cycle was 500-50-500 psi for 2-3-15 minutes respectively. The results of these runs which gave pulp recoveries between 89% and 92% are shown in *Table II*.

A comparison of the results given in *Tables I and II* clearly demonstrates that Douglas fir bark can be incorporated with the wood fiber to make hardboard with commercially acceptable properties. Likewise, Douglas fir bark-wood boards having strengths superior to all Douglas fir wood fiber sized boards will have comparable water absorptions.

Secondly, the power requirement was lower when pulping bark-wood mixture than when pulping straight wood chips to a comparable stock freeness. More specifically, preliminary power consumption data on a commercial pulper indicate that one-third less horsepower is required to pulp bark-wood compositions than straight wood chips when each had received the same prepulping treatment.

TABLE II

100% Wood	Freeness, secs.	Size, %	Spec. Grav.	Caliper, ins.	Absorption, % (a)	Absorption, % (b)	Swelling, % (a)	Swelling, % (b)	Modulus psi.
Douglas Fir.....	32	0	0.980	.239	65.4	60.5	39.3	46.3	6623
Douglas Fir.....	32	1	0.990	.234	11.2	14.8	9.1	14.2	4920
Douglas Fir.....	32	2	1.010	.236	10.2	12.8	8.5	12.1	4617
White Fir.....	36	9	0.978	.222	46.6	45.0	31.9	20.3	6850
White Fir.....	36	1	0.993	.238	7.2	15.1	8.0	4.7	5130
White Fir.....	36	2	1.005	.244	6.7	9.2	10.2	5.1	5350
Hemlock	38	0	1.030	.232	55.1	51.9	35.8	33.3	8500
Hemlock	38	1	1.090	.230	11.9	13.2	11.9	11.5	6170
Hemlock	38	2	1.040	.231	8.5	11.7	10.8	10.6	5980

(a) Sample had sealed edges. (b) Sample had unsealed edges.

100% Bark Hardboard

It was of interest to determine the properties of all bark hardboards. The same pulping and pressing conditions were repeated in making these boards. The properties are given in *Table III*.

Douglas fir bark produced the boards having the greatest strength and the lowest water absorption. This is additional evidence that the use of Douglas fir bark in fiberboard should not affect the final strength properties.

Effect of % Douglas Fir Bark on Board Properties

The amount of bark present in slabwood varies. Since it was decided not to separate bark from the slabs before pulping, it was necessary to determine what effect various percentages of bark composition would have on board properties. For this purpose four runs on Douglas fir bark-wood mixtures were prepared with 15%, 25%, 35%, and 45% bark respectively. Three boards were made from each run with no sizing agents added. All boards were hot pressed at 410°F. platen temperature using a pressing cycle of 500-50-500 psi for 2-3-15 minutes. The results are shown in *Table V*.

Other Bark Species with Douglas Fir Bark in Hardboard

While the greatest percentage of logs milled at the Oregon Lumber Company is Douglas fir, small amounts of white fir and hemlock are also milled. It was desired to find out what effect small amounts of bark from these species would have on hardboard properties if mixed and processed with Douglas fir slabwood.

Several runs were made using Douglas fir bark with white fir bark. Thirty-five percent of a mixture containing 75% Douglas fir bark and 25% white fir bark was added to wood chips. This procedure was repeated using the same proportion of hemlock bark mixed with Douglas fir bark. The boards were pressed at 375°F. platen temperature using a pressing cycle of 500-50-500 psi for 2-3-15 minutes. The results are shown in *Table V*.

It appears that small amounts of white fir or hemlock when mixed with Douglas -fir bark, produce hardboard with acceptable properties. Thus, slabs other than Douglas fir may be added to the Douglas fir for processing into

TABLE III

100% Bark	Freeness, secs.	Size, %	Spec. Grav.	Caliper, ins.	Absorption, % (a)	Absorption, % (b)	Swelling, % (a)	Swelling, % (b)	Modulus psi.
Douglas Fir.....	77	0	1.075	.221	7.7	8.0	4.6	5.5	3880
White Fir.....	180	0	0.943	.227	22.5	24.2	8.6	10.1	1045
Hemlock	72	0	0.996	.195	19.2	21.3	9.9	11.6	890

(a) Sample had sealed edges. (b) Sample had unsealed edges.

TABLE IV

Bark %	Freeness, secs.	Pulp Yield, %	Spec. Grav.	Caliper, ins.	Absorption, % (a)	Absorption, % (b)	Swelling, % (a)	Swelling, % (b)	Modulus psi.
15	31	90	1.039	.218	14.8	14.5	8.0	10.1	5650
25	30	90	1.040	.219	9.3	10.8	5.4	8.4	5175
35	35	87	1.045	.217	6.7	9.3	6.0	5.7	6085
45	39	80	1.061	.227	7.5	10.5	5.7	6.8	5060

(a) Sample had sealed edges. (b) Sample had unsealed edges.

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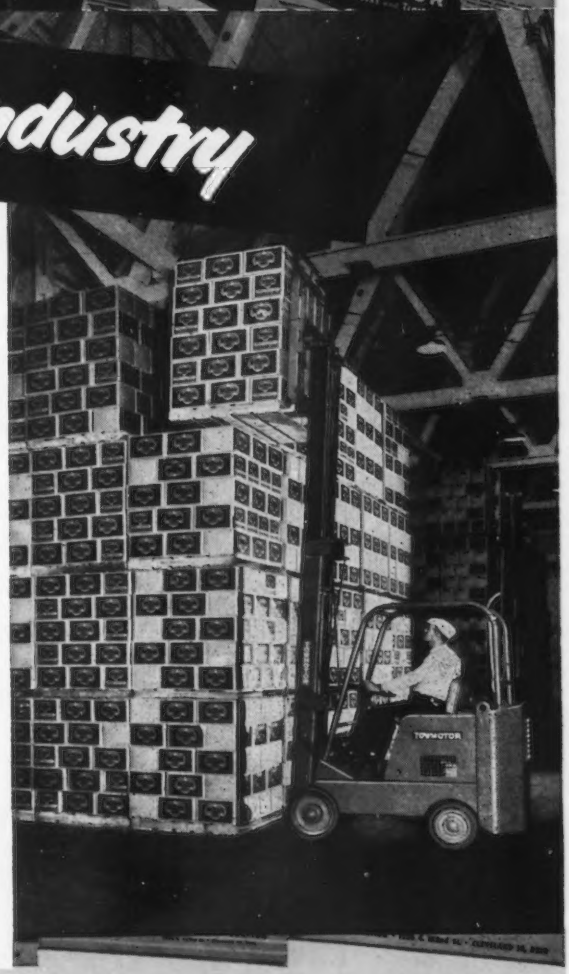

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TABLE V

Bark Mixture	Pulp Yield, %	Freeness, secs.	Caliper, ins.	Absorption, % (a)	Absorption, % (b)	Swelling, % (a)	Swelling, % (b)	Modulus psi.
Douglas-White 3-1.....	89.0	42	.234	15.1	16.6	12.4	16.6	5520
Douglas-Hemlock 3-1....	86.0	37	.233	12.0	17.1	7.7	9.5	5010

(a) Sample had sealed edges. (b) Sample had unsealed edges.

board without materially reducing the quality of the product.

Extractive Content on Douglas Fir Bark versus Water Absorption

Since Douglas fir bark gives such low water absorption values when added to hardboard compositions, it is apparent that this bark contains some extractive materials which act as water repellents. The extractives were removed and the quantities established, indicating that Douglas fir bark contains benzene-soluble extractives amounting to 5% to 10% based on the dry weight of the bark. Then, hardboards made from bark-woods after extractives were removed were tested to determine what effect the extractives had on their water absorption properties.

The amount of extractives in various lots of Douglas fir bark was determined by treating the ground bark with benzene in Soxhlet extractors for eight hours. The loss in weight after treating (corrected for moisture content) was calculated as approximate extractive content. Douglas fir bark lot No. 5 contained 3.4% which was the lowest amount found in all barks examined. Douglas fir bark lot No. 8 contained 6% which was more representative of the average extractive content found in the barks used. Several 35% bark board runs were made with each of these barks using platen temperatures of 375°F. and pressing cycle of 500-50-500 psi for 2-3-15 minutes. The results are shown in *Table VI*.

It would appear that as the percentage benzene extractable matter of the bark increases, the water absorption of the board decreases. However, even the bark with low extractive content produced boards with good water repellency. The amount of extractive found in the bark depends on environment and whether the bark is from the butt or top log. Kurth et al *(3)* reported that the butt bark contains the greater quantity of extractable matter and that the content decreases as the top of the tree is approached. An increase in the extractive content of Douglas fir bark does not decrease board strength. However, when increased quantities of sizing agents, either in the form of resin or wax (emulsion) are used the strength of the board does decrease.

TABLE VI

Bark Lot No.	Benzene Extractable in Bark, %	Absorption, % (a)	Absorption, % (b)	Swelling, % (a)	Swelling, % (b)	Modulus of Rupture psi.
5	3.4	10.7	13.3	8.1	10.1	5322
8	6.0	8.0	11.8	7.7	6.9	5500

(a) Sample had sealed edges. (b) Sample had unsealed edges.

Extracted Douglas Fir Bark and Water Absorption

If the extractives in Douglas fir bark act as water repelling or sizing agents in hardboard, then extracted Douglas fir bark should produce board with high water absorption. So Douglas fir bark was treated with solvents to remove various amounts of the total extracts and to determine the effect on water absorption of each extracted bark in hardboard.

Petroleum ether will remove only a portion of the extractives while benzene will remove nearly all the extractives. Acetone will remove more than either petroleum or benzene. Therefore, each of these solvents was used to remove the extractives from a portion of Douglas fir bark. The extract-produced a board with a water absorption slightly higher than the unextracted bark. The benzene extracted bark gave a board with much higher water absorption than the unextracted bark. The acetone which removed more extractive substance produced boards with the highest water absorption as well as the greatest degree of swelling. Thus, it is apparent that the extractives in Douglas fir bark play an important role in imparting water repellency to hardboard.

TABLE VII

Bark Used	Extract Removed, %	Water Absorption, % (a)	Water Absorption, % (b)	Swelling, % (a)	Swelling, % (b)	Modulus psi.
Unextracted	0.0	6.7	9.7	6.0	5.9	6085
Pet. Ether Ext.....	2.3	10.2	17.3	6.6	11.1	5170
Benzene Ext.	6.0	39.3	33.4	15.3	14.9	5880
Acetone Ext.	10.2	49.2	43.0	27.5	22.2	5900

(a) Sample had sealed edges. (b) Sample had unsealed edges.

Properties of Three Available Commercially Produced Hardboards

Commercially available hardboards made by various companies were obtained and their physical properties were determined by using the same testing methods. The results are given in *Table VIII*.

From these experimental studies it is evident that the properties of hardboards containing bark compare favorably with those of the commercially produced hardboards tested. Laboratory runs only indicate what might be expected on commercial scale production. However, some of these laboratory results were confirmed by semi-commercial and commercial test runs.

TABLE VIII

Commercial Hardboard	Caliper, ins.	Specific Gravity	Water Absorption, % (a)	Water Absorption, % (b)	Swelling, % (a)	Swelling, % (b)	Modulus psi.
A-1	.254	0.915	8.4	14.2	8.3	6.7	4040
A-2	.253	0.925	8.4	13.8	7.9	7.2	4008
A-3	.246	0.927	9.0	12.8	6.5	8.6	4500
B-1	.254	0.940	12.6	17.4	14 1	12.2	4160
B-2	.251	0.965	11.1	16.1	14.0	13.5	4070
B-3	.249	0.945	10.6	19.0	12.8	17.6	4840
C-1	.276	0.995	4.3	8.0	5.5	7.7	3690
C-2	.272	0.990	4.0	7.7	5.2	7.4	4315
C-3	.210	0.875	11.2	17.3	7.2	7.8	2930

(a) Sample had sealed edges. (b) Sample had unsealed edges.

ed barks (35%) were added to wood chips and processed into hardboard in the usual manner. The platen temperature was 410°F. and the pressing cycle was 500-50-500 psi for 2-2-10 minutes. The results are shown in *Table VII*.

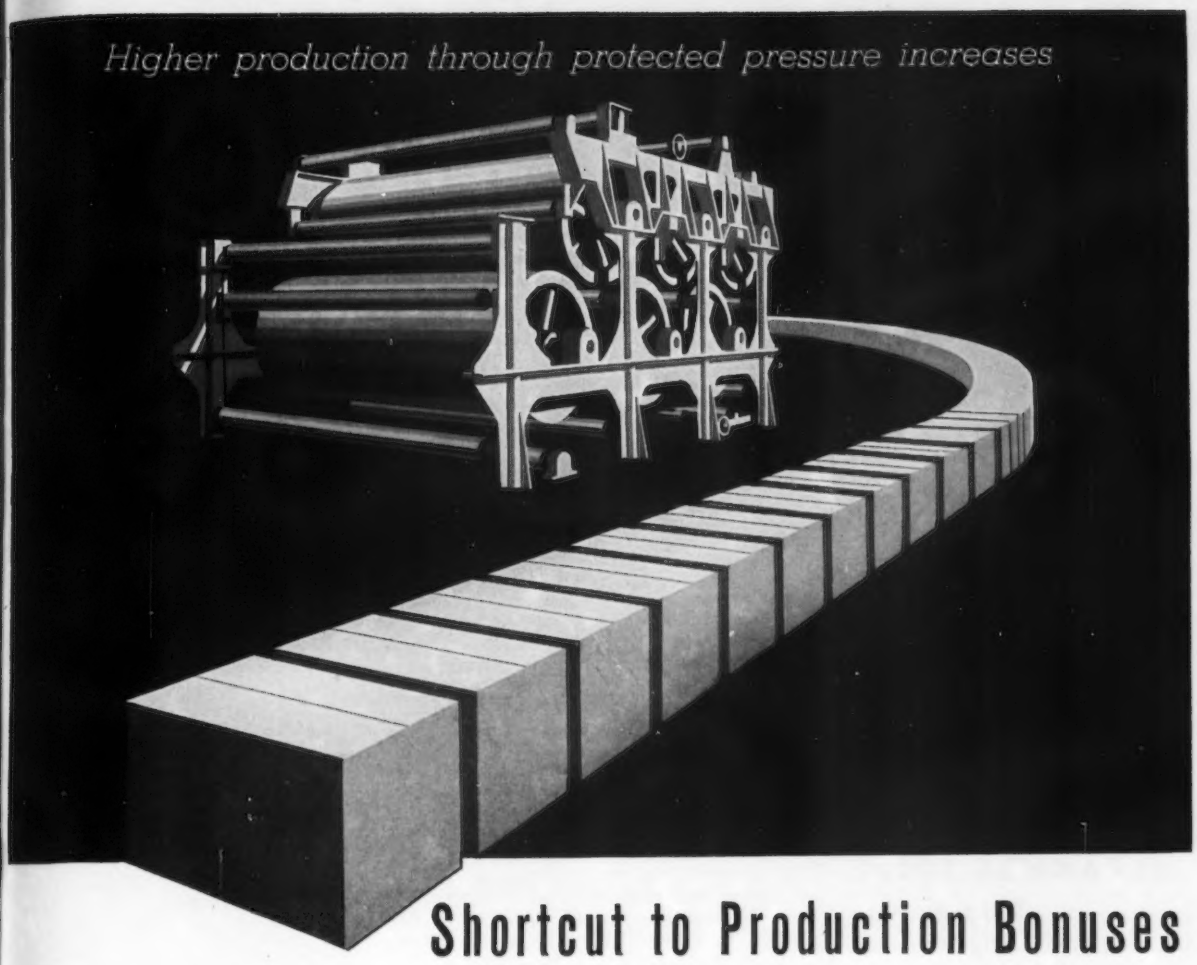
The petroleum ether extracted bark

Therefore, no serious difficulties are anticipated for large scale production of hardboard containing Douglas fir bark. A commercial hardboard plant using this new bark-wood process has been erected by the Blaw-Knox Construction Company of Pittsburgh, Pa. for the Oregon Lumber Company, Dee, Oregon.

ECONOMIC ADVANTAGES

Several distinct economic factors favor the bark-wood hardboard process. These are:

Higher production through protected pressure increases



Shortcut to Production Bonuses

Do you find production increases and lower maintenance pretty hard targets to hit? You'll find a suggestion for both in this case history. Perhaps the same solution could help make your operation more profitable, too.

Paper board used in the manufacture of corrugated boxes was being dried on rolls operated at 40 psi. To gain a 10-ton daily production increase, this company planned to add an 8-roll drier section. Lukenweld analysis, however, revealed a less costly answer . . . a Lukenweld drier section with *only* 6 jacketed steel drier rolls, *operating at 130 psi.* Today, these drier rolls are producing 15 extra tons a day instead of the 10 originally hoped for.

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Lower Raw Material Cost

A satisfactory Douglas fir bark-wood hardboard can be produced containing varying percentages of bark composition. Since a relatively large latitude in the quantity of bark used is permissible, it is not necessary to remove the bark from the slabwood prior to processing. This eliminates debarking equipment. It is estimated that the savings per ton resulting from using Douglas fir slabwood will vary from $3 to as much as $12 for each ton of wood processed depending on the market value of bark-free wood chips.

Lower Power Requirement

Bark-wood mixtures require considerably less horsepower to pulp when compared with pulping straight wood chips. The exact saving in power was not determined, but it is estimated that a 33 percent saving would result.

Elimination of Conditioning Chemicals

In all other commercial hardboard processes sizing agents such as resin or wax plus alum or mineral acids are required to make the finished hardboard resistant to water absorption and swelling. When Douglas fir bark is used, no sizing agents are needed. This is the first wood-fiber hardboard process that does not require chemicals. The economic advantage of this phase of the bark-wood hardboard process depends on the chemical costs involved in the various hardboard processes now used. Chemical costs for manufacture of hardboard vary from $2 to $8 or more per 1,000 sq. ft. of ¼" hardboard produced.

General

This new process requires less water since bark-wood pulp consistencies of 5 percent to 6 percent are suitable for board formation. Present processes require 1 percent to 2 percent pulp consistency. Hot pressing of the wet lap to hardboard requires less caul releasing compound (lubricant) since the natural properties of the bark act as a lubricant. Therefore, boards sticking to cauls will cause fewer shut downs.

SUMMARY

It has been demonstrated that Douglas fir bark in varying percentages together with wood is a suitable raw material for manufacturing commercially acceptable quality hardboard. This use of Douglas fir slabwood is an attractive outlet for the utilization of waste material by Douglas fir mills. Preliminary laboratory tests also indicate that western hemlock bark can be used in making acceptable hardboard. This new bark-wood hardboard process is another step in the integrated utilization of wood waste.

The use of Douglas fir bark in hardboard eliminates the need for adding chemicals such as sizing agents. The amount of bark present in the composition does not appear to be critical in order to produce a satisfactory uniform hardboard. The quantity of bark may vary from 20 percent to more than 45 percent and still maintain a standard product. Hence there is no need to debark slabwood prior to processing or to control the bark content.

This barkwood hardboard process reduces processing cost because (1) raw material is cheap and readily available, (2) less power is required for pulping, and (3) it does not require chemicals.

The process developed and described is covered by patent claims to protect the interest of the sponsors of the research. The sponsors intend to make the process generally available at nominal fees. The Blaw-Knox Construction Company of Pittsburgh, Pa. is the exclusive agent for licensing this bark-wood process.

Literature Cited

1. Clermont, L. P., and Schwartz, H., *Forest Products Research Society Proceedings,* Vol. II, pp. 130-135, 1948.
2. Forest Products Laboratory, *Research Report R1712,* pp. 16-17, 1948.
3. Kurth, E. F., Kiefer, H. J., and Hubbard, J. K., *Timberman,* 49, No. 8; pp. 130-131, 1948.

Acknowledgment

The authors are grateful for the assistance and suggestions given by Mr. A. C. Lighthall, Mr. Floyd Carpenter, and Mr. Newell Wright of the Oregon Lumber Company and Mr. Herbert L. Barneby* of Blaw-Knox Construction Company. The authors wish to thank the Oregon Lumber Company and Blaw-Knox Construction Company for permission to publish the results of this investigation.

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*Present Address: Chemical Processes, P. O. Box 144, Pittsburgh 30, Pa.

Maynard Makes Pulp From Cotton Waste

MAYNARD, Mass. — The Maynard Pulp Products Co. has leased 12,000 square feet of floor space in the idle Assabet Mills in Maynard, and will hire 25 workers at the start to process cotton waste into pulp for paper.

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It is reported that Weyerhaeuser, Longview, Wash., is back in operation. It has been closed since November 30, following a disastrous explosion. This plant supplies 225 tons of bleached kraft market pulp daily.

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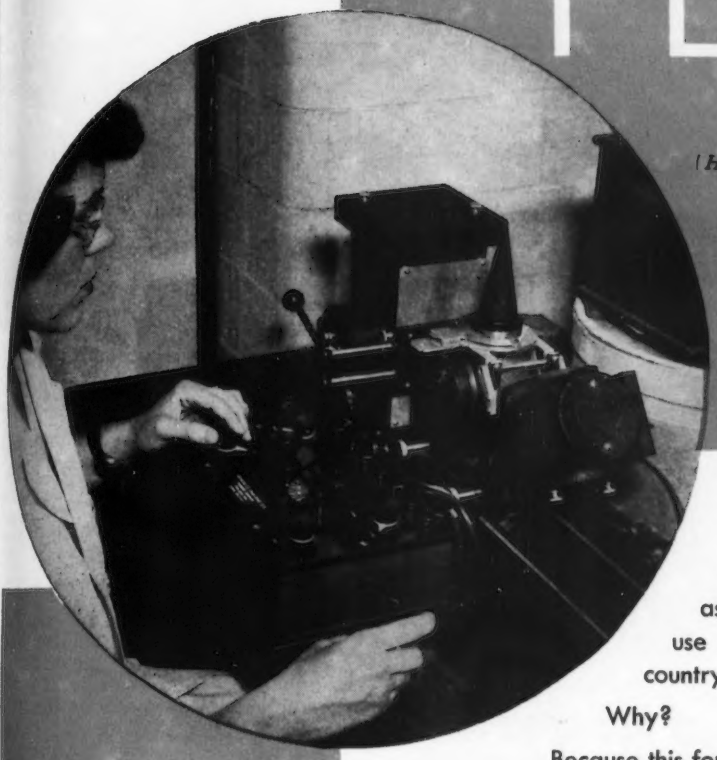

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Tentative TAPPI Program

Commodore Hotel, New York, N. Y., February 18-21, 1952

MONDAY, FEBRUARY 18, 1952

10:00 a.m. First General Session (East Ball Room); K. P. GEOHEGAN, President of TAPPI, Howard Paper Mills, Inc., Dayton, Ohio, *Chairman*

1. Secretary's Report, by R. G. MACDONALD.
2. President's Address, By K. P. GEOHEGAN.
3. Report of Tellers Committee.
4. Report of Joint Text Book Committee, by J. N. STEPHENSON.
5. "The Overall Water Supply Situation throughout the United States Pulp and Paper Regions," by Fred H. Klaer, Jr., Ranney Method Water Supplies, Inc., Columbus, Ohio.

9:15 a.m. TAPPI-ASTM Technical Committee on Petroleum Wax (1) Room F.

9:15 a.m. TAPPI-ASTM Technical Committee on Petroleum Wax (2) Room G.

2:00 p.m. Committee Meetings (Grand Ball Room)

Research Development Division (Grand Ball Room)

Industrial Division (Grand Ball Room)

Converting and Consuming Division (East Ball Room)

Pulp Manufacture Division (Room B-C)

Paper Manufacture Division (Grand Ball Room)

Testing Division (West Ball Room) (Engineering Division Room A)

TUESDAY, FEBRUARY 19, 1952

9:15 a.m. Structural Fibrous Materials (Room A); E. M. JENKINS, Johns-Manville Corp., N. J., *Chairman*

1. "The Use of Asphalt Emulsions in the Manufacture of Insulating Board Products," by J. J. Perot, Flintkote Co., Whippany, N. J.
2. "A Preliminary Investigation of the Adaptability of the General Electric Puncture Tester to the Testing of Structural Insulating Board." by J. A. Van den Akker and Keith W. Hardacker, Institute of Paper Chemistry, Appleton, Wis.
3. "Drying of Insulating Boards," by H. C. Jessen, Johns-Manville Corp., Manville, N. J.
4. Report of the Activities of the Structural Fibrous Materials Comcittee, by E. M. Jenkins, *Chairman.*

9:15 a.m. Water (East Ball Room); A. S. ERSPAMER, P. H. Glatfelter Co., Spring Grove, Pa., *Chairman*

1. "The Activation of Silica and Its Use in Treatment of Mill Water Supply, White Water Utilization and Waste Disposal," A. E. Griffin, Wallace & Tiernan, Inc., Belleville, N. J.
2. "Use of Ozone in Water Purification," by Victor Hahn, Welsbach Corp., Philadelphia, Pa.
3. "Filtration of Board Mill White Waters," by J. Howard Wright, S. Austin Bicking Co., Downingtown, Pa.
4. "Discussion of Questionnaire on Analytical Methods and Solids Losses Evaluation Procedures for Pulp and Paper Mill White Water and Effluents," by Arthur M. Thurm, Champion Paper & Fibre Corp., Hamilton, Ohio.

9:15 a.m. Plastics (West Ball Room); E. C. JAHN, College of Forestry, State University of New York, Syracuse, N. Y., *Chairman*

1. "Acetylation of Cellulose," by R. C. Blume, E. I. du Pont de Nemours & Co., Inc., Waynesboro, Va.
2. "Purified Hardwood Pulps for Chemical Conversion. I. Aspen Sulphite and Prehydrolysis — Sulphate Pulps," by F. A. Simmons, R. M. Kingsbury, J. S. Martin, and E. L. Keller, Forest Products Laboratory, Madison, Wis.
4. "Polyamide Resin Suspensoids — A New Tool for the Paper Converter," by Harold Wittcoff, M. M. Renfrew, and Fred B. Speyer, General Mills, Inc., Minneapolis, Minn.
5. "New Methods of Adding Neoprene Latex to Pulp," by R. H. Walsh, E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

9:15 a.m. Statistics (Room B-C); JOHN F. LANGMAID, JR., S. D. Warren Co., Cumberland Mills, Me., *Chairman*

1. "A Printer's Interest in Statistical Quality Control in Paper Mills," by O. H. Somers, Western Printing & Lithographing Co., Racine, Wis.
2. "Significance of Laboratory Sizing Data," by Ell Dee Compton, Monsanto Chemical Co., Everett, Mass.
3. "Management Reviews a Controlled Operation," by W. A. MacCrehan, Empire Box Co., Garfield, N. Y.
4. "Case Studies in the Application of Industrial Statistics, Part II," by Charles A. Bicking, U. S. Dept. of Defense, Washington, D. C., and R. T. Trelfa, Watervliet Paper Co., Watervliet, Mich.

9:15 a.m. Corrugated Containers (Grand Ball Room); F. D. LONG, Container Corp. of America, Chicago, Ill., *Chairman.*

Symposium on "Corrugated Starch Adhesives," BURT MENDLIN, Cornell Paperboard Co., Milwaukee, Wis., *Moderator.*

1. "Résumé of Replies to Starch Adhesives Questionnaire," by Burt Mendlin.
2. "Starch Formulations and Control of Starch Viscosities," by J. E. Killinger, Penick & Ford, Inc., Cedar Rapids, Iowa.
3. "Advantages and Disadvantages of One vs. Two Starch Systems," by E. S. Gantt, Corn Products Sales Co., Chicago, Ill.
4. "Fluff, Flutter, Fingerlines and Other Operational Problems," by S. Drum, Container Corp. of America, Chicago, Ill.
5. "Heat Balance on a Corrugator," by R. T. Cassady, Jackson Box Co., Cincinnati, Ohio.
6. "Testing and Quality Control," by D. P. McNelly, Fort Wayne Corrugated Paper Co., Fort Wayne, Ind.
7. Panel Discussion of Papers 1-7.

9:15 a.m. Papermaking (Fourdrinier) (Room G); N. R. PHILLIPS, Champion Paper & Fibre Co., Canton, N. C., *Chairman*

1. Round-Table Discussion on the "Paper Machine Shake."

9:15 a.m. Chemical Products (Room D); ARTHUR POLLAK, Consulting Engineer, New York, N. Y., *Chairman*

1. Committee Meeting.

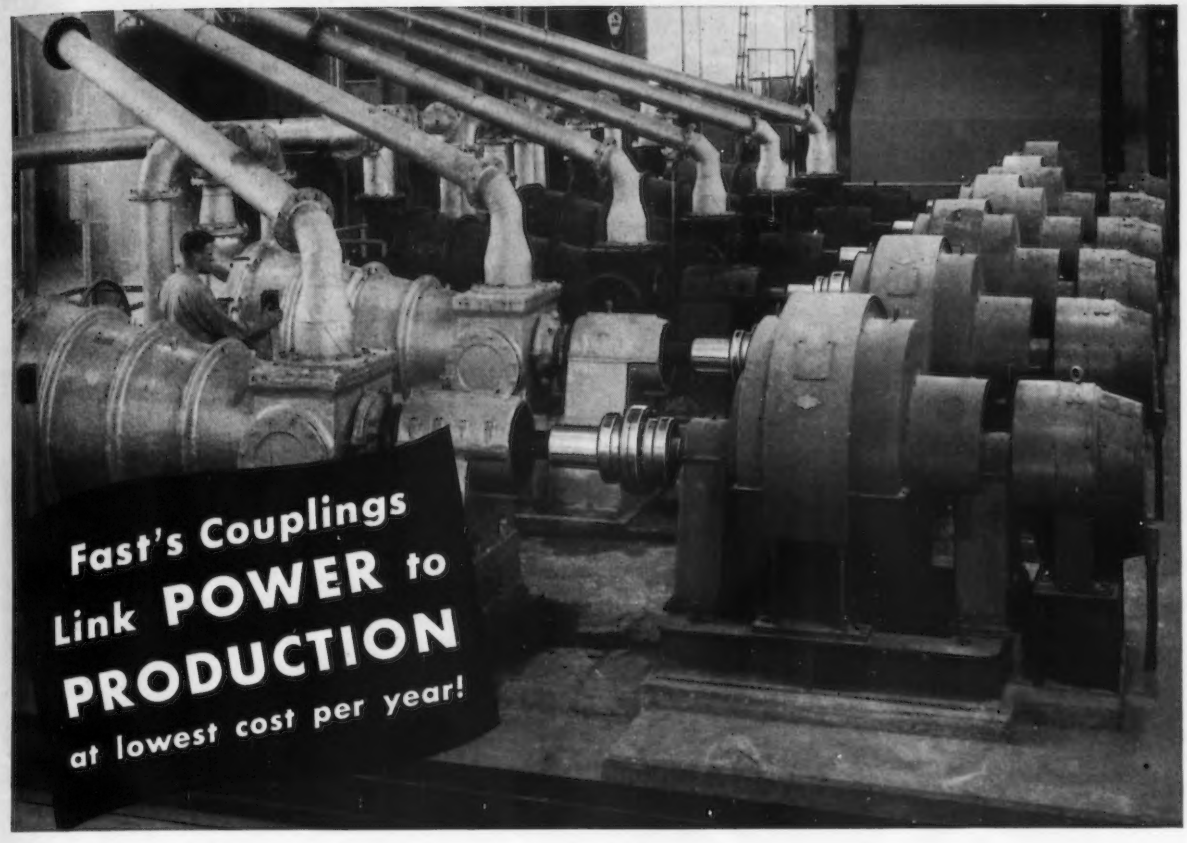
9:15 a.m. TAPPI-ASTM Technical Committee on Petroleum Wax (Room E)

9:15 a.m. TAPPI-ASTM Technical Committee on Petroleum Wax (Room F)

2:00 p.m. Preparation of Papermaking Materials (East Ball Room) F. S. KLEIN, Byron Weston Co., Dalton, Mass., *Chairman*

1. "Mechanical Correction of Two-Sidedness," by M. J. Landberg and P. R. Schreiber, General Dyestuff Corp., and H. H. Behrens, Irvin Dyestuff Corp., Ltd. (Canada).
2. "The Use of Graphic Panels in the Paper Industry," by Donald B. Scrivens, Taylor Instrument Co., Rochester, N. Y.
3. "The Beaterpulper," by Arthur W. Infanger, Cowles Co., Cayuga, N. Y.
4. "Handling Materials in the Paper Industry," by L. O. Millard, Link-Belt Co., Chicago, Ill.
5. The Hammermill Dirt Separator, by E. L. Rostatter & A. H. Crougs, Hammermill Paper Co., Enid, Pa.

2:00 p.m. Acid Pulping (Room B-



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INDUSTRY'S STANDARD FOR 32 YEARS

C); JOHN M. McEWEN, Weyerhaeuser Timber Co., Pulp Div., Everett, Wash., *Chairman*

1. "Pilot Plant Recovery of Heat and Sulphur from Spent Ammonia Base Sulphite Pulping Liquor," by J. H. Hull, Crown Zellerbach Corp., Camas, Wash., and G. V. Palmrose, Soundview Div. Scott Paper Co., Everett, Wash.
2. "Acid Pulping Committee Report on TAPPI Strainer and Circulation Survey," by John M. McEwen, Pulp Div., Weyerhaeuser Timber Co., Everett, Wash.
3. "Sulphite Digester Lining Problems," by William H. Kraske, Oxford Paper Co., Rumford, Me.
4. "Magnesia-Base Recovery for the Sulphite Pulping Industry," Svarre Hazelquist, Pulp Div., Weyerhaeuser Timber Co., Longview, Wash., and Charles E. Rogers, Babcock & Wilcox Co., Alliance, Ohio.
5. "The Manufacture and Properties of Chlorine Dioxide," by E. Kesting, Elektrochemische Werke, Munich, Germany.
6. "Soda-Base Sulphite Recovery by the Sulfox Process," by Arthur Pollak, Consulting Engineer, New York, N. Y., and Robert S. Aries, Polytechnic Institute of Brooklyn, Brooklyn, N. Y.
7. "Modern Developments in Welded Barking Drum Design," by George M. Dick, Canadian Ingersoll-Rand Co., Sherbrooke, Que.

2:00 p.m. Fundamental Research (West Ball Room); HARRY F. LEWIS, Institute of Paper Chemistry, Appleton, Wis., *Chairman*

1. "Some Observations on the Kinetic Coefficient of Friction of Paper," by Geoffrey Broughton, Lowell Textile Institute, Lowell, Mass., and Joan L. Gregg, U. S. Envelope Co., Worcester, Mass.
2. "Physical Nature of Hemicelluloses" (Institute of Paper Chemistry).
3. "Effect of Various Constituents of Wood and Pulp on the Ignition Point of the Material" (Institute of Paper Chemistry).

2:00 p.m. Corrugated Containers (Grand Ballroom); F. D. LONG, Container Corp. of America, Ill., *Chairman.*

Symposium on "Corrugated Silicate Adhesives," M. F. Knack, River Raisin Paper Co., Monroe, Mich., *Moderator.*

1. "Résumé of Replies to Silicate Adhesives Questionnaire and Remarks on Efficient Use of Silicate," by E. G. Boyce, E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.
2. "Effect of Varying Compositions of Silicate on Corrugator Operation," by R. L. Kreyling, Philadelphia Quartz Co., Philadelphia, Pa.
3. "Proper Mechanical Adjustment for Good Corrugator Operation," by C. Kreegor, Industrial Corrugated Box Co.
4. "Clearances on the Corrugator," by Charles Mitchie, Samuel Langston Co., Camden, N. J.
5. "Steam Supply and Evacuation," by J. E. Wilske, Owens-Illinois Glass Co.
6. General Discussion of Papers 1-5.

2:00 p.m. Microbiological (Room A); R. F. DE LONG, Marathon Corp., Menasha, Wis., *Chairman*

1. "A method of Laboratory Evaluation of Chemicals as Slimicides," by S. I. Cohen, Gallowher Chemical Corp., New York, N. Y.
2. "Performance of Paper Machine Wet Felts. II. Further Studies of the Plugging of Felts," by D. W. French, C. M. Christensen, and S. J. Buckman, Buckman Laboratories, Memphis, Tenn.
3. "Lever Spore Cloud Method for the Evaluation of Anti-mycotic Properties of Paper and Paperboard," by L. S. Vinson, Lever Bros. Co., Cambridge, Mass.
4. "Factors Affecting Sling Growth" by L. A. McKEOWN, Plattsburg, N. Y.

2:00 p.m. Hydraulics (Room D); K. J. MACKENZIE, Eastman Kodak Co. Rochester, N. Y., *Chairman*

1. Committee Meeting.

2:00 p.m. TAPPI-ASTM Technical Committee on Petroleum Wax (Room E);

2:00 p.m. TAPPI-ASTM Technical Committee on Petroleum Wax (Room F);

2:00 p.m. Structural Fibrous Materials (Room G); EDWARD M. JENKINS, Johns-Manville Corp., Manville, N. J., *Chairman*

1. Committee Meeting.

WEDNESDAY, FEBRUARY 20, 1952

9:15 a.m. Graphic Arts (East Ball Room); FRED D. ELLIOT, Time, Inc., Springdale, Conn., *Chairman*

1. "Review of the New Developments in the Graphic Arts," by R. H. Simmons, Government Printing Office, Washington, D. C.
2. "Mechanization of Sheet Paper Counting," by Charles Stevens, Charles Stevens, Inc., Toledo, Ohio.
3. "The Relation Between Paper and Gravure Printing," by R. T. Van Derveer, Triangle Publications, Philadelphia, Pa.
4. "Pick Testing of Offset Papers," by Gordon C. Wheeler and Robert F. Reed, Lithograph Technical Foundation, Chicago, Ill.
5. Panel Discussion on "Measurement of Printing Smoothness": S. M. Chapman, Optical Supervisor, Printability Section, Pulp and Paper Research Institute of Canada, Montreal, P. Q.; Kenneth Latimer, Time, Inc., Springdale, Conn.; G. R. Sears, Institute of Paper Chemistry, Appleton, Wis.

9:15 a.m. Wet Strength (Room B-C); KENNETH W. BRITT, Scott Paper Co., *Chairman*

1. "Methods of Increasing the Efficiency of Wet Strength Resins," by J. B. Daniels, Plaskon Div., Libbey-Owens-Ford Glass Co., Toledo, Ohio.
2. "Problems in Testing Wet Strength Paper," by C. S. Maxwell, American Cyanamid Co., Stamford, Conn.
3. "Testing of Wet Strength Paper at the Paper Machine," by A. G. Durgin, Brompton Pulp & Paper Co., East Angus, P. Q.
4. Round-Table Discussion of "Wet Strength Testing Methods."

9:15 a.m. Alkaline Pulping and Chemical Engineering (West Ball Room); HENRY VRANIAN, Chesapeake Corp., West Point, Va., and J. R. LIENTZ, Union Bag & Paper Corp., Savannah, Ga., *Chairmen*

1. "Effect of Chip Size in Kraft Pulping," by W. J. Nolan and Wilson F. Brown, University of Florida, Gainesville, Fla.
2. "Studies in Continuous Alkaline Pulping II, High Yield Cellulose Pulps from Scrub Oak," by W. J. Nolan and W. F. Brown, University of Florida.
3. "The Debarking of Scrub Oak," by R. L. Harvin, W. J. Nolan, and W. F. Brown, University of Florida.
4. "Esterification of Tall Oil with Glycerine," by Robert S. Aries and Melvin Wolkstein, Polytechnic Institute of Brooklyn, Brooklyn, N.Y.
5. "Uniform Cooking by Continuous Kraft Semichemical Process," by A. P. Yundt, Camp Mfg. Co., Inc., Franklin, Va.
6. Paper by E. M. Leavitt, North Carolina Pulp Co., Plymouth, N. C.

9:15 a.m. Papermaking (Fourdrinier) (Room A); NOEL R. PHILLIPS, Champion Paper & Fibre Co., Canton, N.C., *Chairman*

1. "Fundamentals of Lithography for Paper Makers," by R. F. Reed, Lithographic Technical Foundation, Chicago, Ill.
2. Round-Table Discussion on "Paper Defects."

9:15 a.m. TAPPI-ASTM Technical Committee on Petroleum Wax (Room F);

9:15 a.m. TAPPI-ASTM Technical Committee on Petroleum Wax (Room G);

2:00 p.m. Packaging Materials and Containers (East Ball Room); L. E. SIMERL, Marathon Corp., Menasha, Wis., *Chairman*

1. "Arganolepitic Evaluation of Paper Products for Food Packaging," by L. C. Cartwright, Foster D. Snell, Inc., New York, N. Y.
2. "A Volumetric Gas Analysis Method for Measuring Simultaneously Oxygen and Carbon Dioxide Permeabilities," by Arthur H. Landrock and Bernard E. Proctor, Massachusetts Institute of Technology, Cambridge, Mass.
3. "Development of Design Data for Corrugated Fiberboard Shipping Containers," by K. Q. Kellicutt and E. F. Landt, Forest Products Laboratory, Madison, Wis.

2:00 p.m. TAPPI-ASTM Technical Committee on Petroleum Wax (Room B-C); A. M. HEALD, Scott Paper Co., Chester, Pa., *Chairman*

Reports of Subcommittees:

1. Strength Tests, J. W. PADGETT, *Chairman*
2. Flow Tests, HANS SCHINDLER, *Chairman*

(Continued on page 42)

Early Paris post office. Illustration from Bettmann Archive.

Paper, Printing and the Postal Service

Older than paper, far older than printing is the idea of a postal service. It began in primitive Persia, flourished in ancient Rome. Even through the "Dark Ages," Merchant Guilds carried it on. But a King of France, Louis XIV, in 1653 first extended postal service to the individual. For a sou, the Paris post office would deliver a letter to your private abode.

In America the postal service is inseparably associated with the name and fame of Benjamin Franklin. Under British rule he served 16 years as Deputy and 21 as Postmaster for the Colonies, then in 1775 became the first Postmaster General appointed by the Continental Congress.

Once hand written letters largely made up the contents of the carrier's pouch. But the coming of plentiful paper and the advancement of printing changed everything. Today the United States Post Office handles more than four billion pounds of printed matter, letters and cards each year, as well as seven billion pounds of merchandise wrapped in paper and paper board. Paper, printing and the postal service work together in providing and stimulating the life blood of progress. Supplying those billions of pounds of paper in such infinite variety of purposes is one of the great achievements of the pulp and paper industry.

The dramatic story of paper is told in the sound-and-color film, "Paper—Pacemaker of Progress," and in a book under the same title. Both are presented by F. C. Huyck & Sons as a tribute to the Paper Industry. The book will be sent free upon request.

KENWOOD WOOL PRODUCTS
HUYCK *Felts*

F. C. HUYCK & SONS • *Kenwood Mills* • RENSSELAER, N. Y.

New Equipment

Supplies and Materials

Rotary Screen Water Filter

For fine screening of raw intake water, hot pond or cleanup water, the North Water Filter is rated as adaptable to unlimited applications. A rotary, self-cleaning, gravity type screen unit, designed specifically for the pulp and paper industry by Green Bay Foundry

and Machine Works, Green Bay, Wis., it is built in 4, 6, 8 and 10 feet screen sizes to handle varying capacities, and comes fully assembled, ready for operation.

Where desired, the unit can be supplied with a special phenolic-resin coating to add acid- and alkali-resistant properties to the metals; the discharge spout can be extended up to four feet beyond the machine proper for easy disposition of solids; special small cast-iron end-frames can be supplied for fitting into concrete pits; any size mesh wire can be furnished and in any material; perforated plates can be supplied around the cylinder instead of wire mesh for some applications; any size inlet aperture can be selected for convenient piping. All inlets and outlets are standard American flange connections. Shower hood covering the cylinder can be fabricated for special installation.

Fluorescent Accessories For Use With Black Light

A new line of fluorescent materials that "glow like fire" under long wave ultra-violet or black light is announced by Ultra-Violet Products, Inc., 145 Pasadena Ave., South Pasadena, Calif.

Designed for use with the Blak-Ray tubes and fixtures, as well as with standard black light sources, the materials are said to be specially adaptable for industrial applications requiring inspection markings that will be invisible in ordinary light.

The new accessories include marking pens and stamp pads for use with invisible inks, as well as wire, crayons, invisible tracer pastes and powders, papers, cardboards, etc. Also included are water-color and bulletin paints of two types: "Visible"—brilliant daylight colors whose intensity is magnified many times under black light — and "Invisible," which although not transparent, appear white to cream in ordinary light and glow brilliantly in their identified colors under the Blak-Ray. The paints may be brushed, sprayed, or silk-screened.

Still a third type of paint is now available which may be wiped off glossy surfaces such as window glass, mirrors, metals, and painted objects with a dry cloth where temporary application with easy removability is desirable.

Stainless Steel Paint

A stainless-steel pigmented paint which appears to be particularly good for industrial atmospheres has been developed by Westinghouse Electric Corp., 306 Fourth Ave., Pittsburgh 30, Pa. Applied to distribution transformers installed opposite a steel plant, the finish is said to look perfect after a year-and-a-half exposure.

Formulated of flakes of stainless steel mixed with suitable vehicle, it has proven a very desirable paint for certain electrical equipments. Though too early to make full evaluation of results, it probably will have excellent resistance to certain types of corrosion. For example, around plants using alkali, the transformers and other equipments may be better protected with stainless steel pigments in the final coat, the manufacturer believes. For mobile transformers where a good appearing, gray, durable matte finish is desired, the stainless steel paint is now Westinghouse standard for the purpose.

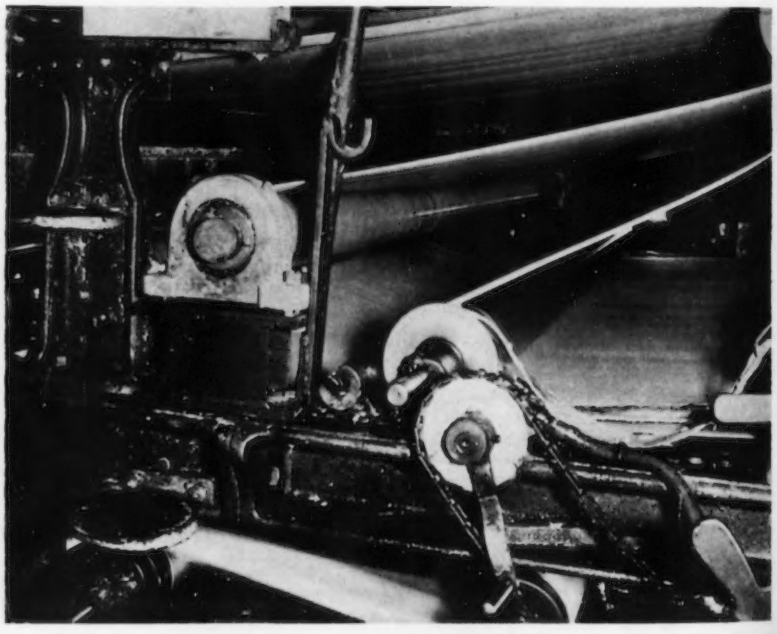
Dry Chemical Fire Extinguisher

The addition of a new Dry Chemical Fire Extinguisher is announced by the Fyr-Fyter Co., Dayton, Ohio.

Combining the practical features of known methods of discharging dry chemical under pressure with exclusive features of Fyr-Fyter design, the new unit is described as a sturdy but lightweight unit of stainless steel and aluminum which tests to 500 lbs. pressure. In many tests the extinguishers have gone as high as 1250 lbs. before rupturing, it is said.

The chemical used is a special fire-killing powder, fine enough to give

(Continued on page 44)



Free-Wheeling Expander

According to the manufacturer, Mount Hope Machinery Co., Taunton, Mass., the use of the Free-Wheeling Expander on press-section felts on Fourdrinier machines eliminates the need of worm rolls; keeps the felt at full width; makes it possible to apply the proper amount of tension on the felt; eliminates the bowing of the seam—and, where showers are used to clean the felt, it opens the felt for a better cleaning action.
First of the new installations was made at the Pejepscot Paper Co., Brunswick, Me. Several more of similar nature were made during 1951, with the initial installation on a cylinder machine in December.

BIG
PULPSTONES
. . . OR LITTLE ONES

Norton Can Furnish You with Exactly The Right Stone for Your Needs

Whether your grinders are husky 5000 horsepower jobs that take giant stones like the world's largest above, or smaller 100 h. p. grinders that take stones like the 40" diameter at the right, you can be sure that Norton can furnish a stone that's *exactly* right.

And it will not only be right in size but also in the type of abrasive and the grit size and spacing to produce from your wood the exact kind of pulp that you require.

What's more, Norton engineering service is available to help you select the right stone specifications to meet conditions in your mill.

NORTON COMPANY, WORCESTER 6, MASS.
Norton Company of Canada, Ltd., Hamilton, Ontario

NORTON
PULPSTONES

Making better products to make other products better

Abrasives · Grinding Wheels · Grinding and Lapping Machines · Refractories · Porous Mediums · Non-slip Floors · Norbide Products · Labeling Machines

PRICES

The prices below reflect market quotations in New York at the mill level on standard grades. Does not include spot offerings.

PAPER AND BOARD

Standard News, Delivered Ports

Rolls, contract, per ton	$114.00/116.00
Sheets	130.00/ —

Kraft— per cwt. 50# base wgt. OPS Ceiling CPR 88

F.o.b. Southern & Western integrated mills. C.l. Freight allowed up to $10 a ton.

Standard Wrapping, ctr. rolls	$7.75/ —
Butchers, counter rolls	8.25/ —
Standard Bag, mill rolls	7.50/ —
Shipping Sack, mill rolls	7.75/ —
Gumming, mill rolls	8.00/ —
Asphalting, mill rolls	7.75/ —
Envelope, Sub. 20, mill rolls	9.25/ —

Tissues— per ream 24x36 (480) 10 lbs. 2500 lbs or more

Wh. No. 1 Frd.	$2.25 /$2.40
Wh. No. 1 MG	2.25 / 2.40
Wh. No. 1½	1.95 / 2.05
Wh. No. 2	1.75 / 2.00
Kraft Anti-Tar 20x30	2.12 / 2.25
White Anti-Tar 20x30	2.20 / —

Toilet— per case of 100 rolls—1M sheets

Unbleached 4½x4½	$8.00/$8.25
Unbleached 4½x5, 650 sheets	6.65/ —
Bleached 4½x4½	10.00/12.50
Bleached 4½x5	9.96/ —
Per Case of 50 rolls—2000 sheets	
Unbleached 4½x4½	$8.00/$9.75
Bleached 4½x4½	6.95/ —
Per Case of 100 rolls—1000 sheets	
Facial, 4½x4½, 2-ply	$8.95/10.37
4½x5, 2-ply	10.25/10.75

Paper Towels— per case of 3750

Wh. Jr. M'tif'd 9⅛x9½	$6.40
Br. Sr. M'tif'd 9⅛x12	4.40
Br. Jr. M'tif'd 9⅛x9⅞	3.90
Br. Jr. Sgl. fold 9⅞x10¾	3.95
C-Fold 10⅛ min. x 14 max.	$5.90/$6.64
Blchd. 7½x11, 48/50 rolls	$6.80/$7.92

Manila, per cwt.

No. 1 Jute Tag, 100-lb., sheets	$20.55/22.55
Reg. Jute M.F. 40-lb., sheets	19.50/21.50
Printing Manila	10.50/12.00

Gummed Tape— per bdl., 500 bdls. or more

90-lb. 375 ft. GSI	$7.20 / —
60-lb. 600 ft. GSI	7.20 / —
35-lb. 800 ft. GSI	8.28 / —
35-lb. 500 ft. GSO	6.21 / —

MARKET WOOD PULP

First Quarter Contract Prices. Per Short Air-Dry Ton

	Varying freight allowances		On Dock Atlantic Ports		
	*U. S.	Canadian	*Swedish	*Finnish	*Norwegian
Groundwood	$92.50/ —	‡$95.00/100.00			
Sulfate, Bleached	145.90/ —	190.00/200.00	$230.00/ —	$230.00/ —	$230.00/ —
Semi-bleached Sulfate	140.00/ —				
Sulfate, Unbl.	132.50/ —	145.00/175.00	200.00/ —	200.00/ —	
Sulfite, Blchd.	140.00/ —	160.00/175.00	225.00/ —	225.00/ —	225.00/ —
Sulfite, Unblchd.	132.50/ —	150.00/160.00	200.00/ —	200.00/ —	
Sulfite, Unbl'd (Glassine)		164.00/ —			
Soda, Blchd.	140.00/ —	155.00/160.00			
Sulfite Screenings	72.50/ —				
Sulfate Screenings	67.50/ —				
Groundwod Screenings	60.00/ —				
Unblchd Sulfate Sideruns	132.50/ —				
Stand. News. Sideruns	92.50/ —	106.00 —			

* OPS Ceiling, CPR 49 ‡ F.o.b. Shipping Point.

Boards Delivered plant, per ton ..... CPR 108

Filled News	$110.00/ —
Plain Chip	105.00/ —
Blchd. Mla. L-d. Chip	150.00/ —
White Pat. coated .020	175.00/ —
Kraft Liners 42 lb. per M sq. ft.	2.47/ —
Kraft Corr. .009 per M sq. ft.	1.59/ —
Binders Boards	137.50/140.00

The following prices are representative distributors' resale prices:

Rag Content Bonds and Ledgers—
White, 20 lb.

Bonds	4 Ctns.
	per cwt.
100% Rag Ex. No. 1	$70.45/$75.90
100% Rag	62.65/ —
75% Rag	48.15/ —
50% Rag	38.90/ —
25% Rag	31.65/ 33.00

Ledgers	4 Ctns.
	per cwt.
100% Rag Ex. No. 1	$72.65/$72.80
100% Rag	63.90/ —
75% Rag	49.40/ —
50% Rag	40.20/ —
25% Rag	33.00/ 34.30

Sulphite Bonds and Ledgers
White, 20 lb.

Bonds	4 Ctns.
	per cwt.
Watermarked	$19.00/$20.50
Plain	18.40/ 19.50

Ledgers	4 Ctns.
	per cwt.
Watermarked	$20.30/$21.80
Plain	19.35/ 20.80

White Book

Conversion Coated	Case
	per cwt.
No. 1	$23.90/$24.65
No. 2	22.15/ 23.40
No. 3	21.90/ 22.40
Machine Coated	
No. 1	$18.40/$18.90
No. 2	16.65/ 16.90
Uncoated	
No. 1 Antique (Watermarked)	$18.65/$19.65
Offset	18.65/ 19.90
A Grade E. F.	18.10/ 19.90
A Grade S. C.	18.65/ 19.40
B Grade E. F.	18.40/ —
B Grade S. C.	17.40/ 19.15

‡ Indicates a price change.

WASTE PAPER MARKET

Prices to mills, per ton, f.o.b. cars shipping point (includes brokers' fee.) These quotations are a partial indication of the price range in each market on the date specified, as gathered from major dealers. ALL PRICES ARE STRICTLY NOMINAL.

	New York Jan. 21	Philadelphia Jan. 11	Boston Jan. 11	Chicago Jan. 7
No. 1 Mixed Paper	nominal	$10.00/ —	$10.00/ —	$10.00/ —
No. 1 News	12.00/ 14.00	13.00/ —	12.00/ 13.00	17.00/ —
Over-issue News	15.00/ 18.00	18.00/ —	15.00/ 22.00	20.00/ —
Mill Wrappers	13.00/ 22.00	13.00/ —	13.00/ 19.00	13.00/ —
Corrugated Containers	14.00/ 15.00	15.00/ —	15.00/ 15.50	17.00/ —
Double Kraft Ld. Corr. Cuts	40.00/ 63.00	55.00/ —	40.00/ 63.00	55.00/ 63.00
100% Kraft Corr. Cuts	60.00/ 85.00	95.00/ —	75.00/ 80.00	85.00/ —
Used Sugar & Flour Bags	45.00/ 50.00	35.00/ 40.00	45.00/ 46.50	50.00/ —
Super Resorted Br. Kraft	45.00/ 60.00	45.00/ 55.00	45.00/ 60.00	50.00/ —
New Br. Kraft Env. Cuts	100.00/115.00	100.00/ —	100.00/125.00	100.00/ —
New Br. Kraft Cuts	90.00/100.00	95.00/ —	85.00/105.00	90.00/ —
No. 1 Gdwd Shvs.	35.00/ 40.00	30.00/ —	33.00/ 40.00	32.00/ —
White Newsblanks	65.00/ 70.00	70.00/ —	55.00/ 75.00	50.00/ —
No. 1 Flyleaf Shvs.	35.00/ 65.00	40.00/ —	45.00/ 70.00	60.00/ —
No. 1 Soft Wht. Shvs.	120.00/140.00	110.00/ —	125.00/145.00	125.00/ —
Super Soft Wht. Shvs.	150.00/ —	— / —	140.00/165.00	135.00/ —
Hd. Wht. Shvs.	140.00/160.00	160.00/ —	150.00/175.00	140.00/ —
Hd. Wht. Env. Cuts	165.00/185.00	170.00/185.00	175.00/190.00	150.00/ —
New Manila Env. Cuts	100.00/115.00	120.00/ —	110.00/125.00	65.00/ —
Col. Tab Cards	80.00/ 90.00	90.00/ —	80.00/ 95.00	75.00/ —
Manila Tab Cards	110.00/120.00	125.00/ —	120.00/130.00	100.00/ —
No. 1 Mixed Ledger	75.00/ 80.00	75.00/ —	67.00/ 95.00	80.00/ —
White Ledger	100.00/105.00	105.00/ —	100.00/110.00	95.00/ —
No. 1 Book & Mag.†	33.00/ 37.00	22.00/ 24.00	29.00/ 32.00	27.00/ —
No. 1 Rep'd. Hvy. Books‡	43.00/ 50.00	32.00/ 35.00	45.00/ 57.00	40.00/ —

† Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% groundwood. § Deld.

RAG MARKET

New Domestic Cotton Cuttings
OPS Ceiling Price, CPR 28
Delivered Mill Basis

Add 7½% Dealer Commission

No. 1 White Shirts	$21.00
No. 1 Unblchd. Muslins	21.00
Blchd. & Unblchd. Underwears	21.00
Blchd. Canton Flannels	21.00
No. 1 Light Silesias	16.00
No. 1 Light Prints	11.50
No. 1 Blue Overalls	14.50
Suntan Khakis	11.50

Add 10% Dealer Commission

Fancy Shirts	$10.00
Indigo Blues	10.00
Mixed Khakis	8.00
Corduroys	8.00
Cottonades	8.00
No. 1 Washables	6.50

Old Domestic Cotton Rags
(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.
Mixed White	$6.00/$6.50
Cotton Pants & Overalls	6.00/ 6.25
Thirds and Blues, Repacked	5.00/ 5.50
No. 1 Roofing Rags	1.20/ 1.25
No. 2 Roofing Rags	1.00/ 1.10
No. 3 & 4 Roofing Rags	.90/ 1.00

Bagging
(Prices to Dealers, f.o.b. N. Y.)
PRICES NOMINAL

	Per 100 lbs.
Foreign Gunny	$5.50/$6.75
Domestic Gunny, No. 1	5.50/ 6.50
Heavy Wool Tares	5.50/ 6.00
Foreign Manila Rope	9.00/ 9.25
Domestic Manila Rope	9.00/ 9.25
Jute Strings	6.00/ 6.50
No. 1 Sisal Strings	8.50/ 8.75
Paper Mill Tares	5.25/ 5.50
Foreign Scrap Burlap	5.50/ 6.50
Domestic Scrap Burlap	5.50/ 6.00
Austr. Wool Pouches	7.50/ 8.00
New Burlap Cuttings	7.00/ 7.50

CAREFUL FABRICATION Assures More Efficient PERFORMANCE

This 11-ft. 2 in. diam. by 34-ft. 4 9/16 in. digester is loaded for shipment to the Weyerhaeuser Timber Company at Longview, Washington.

THE Horton digester in the above view is one of four we built at our Birmingham, Ala., plant for the Weyerhaeuser Timber Company at Longview, Washington. They are made of A-212, Grade B, Firebox quality steel clad with 15 per cent Type 316 stainless steel with 0.04 per cent maximum carbon.

Supplying digesters, chip tanks, blow tanks, seal tanks, storage tanks, elevated water tanks and Marx Savealls made of carbon steel is a regular part of our business. We are also equipped to build structures from special metals to meet your specifications. There are stress relieving facilities at three of our plants and we have equipment to do x-raying.

When your plant requires new tanks or steel plate work to keep pace with the ever growing demand for paper products, investigate the experience and facilities of Chicago Bridge & Iron Company. Write our nearest office for estimates and quotations. There will be no obligation on your part.

Horton Equipment for the Pulp and Paper Industry

chip tanks . . . blow tanks . . . pulp tanks . . . Marx Savealls elevated water tanks . . . sulphate and sulphite digesters accumulators . . . acid tanks

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Atlanta, 3.....2142 Healey Building
Birmingham, 1. .....1559 North 50th Street
Boston, 10.....1064—201 Devonshire Street
Chicago, 4.....2130 McCormick Building
Cleveland, 15.....2255 Guildhall Building
Detroit, 26.....1565 Lafayette Building
Havana.....402 Abreo Building
Houston, 2.....2163 C & I Life Building
Los Angeles, 17..1561 General Petroleum Building
New York 6.....3333—165 Broadway Building
Philadelphia, 3..1665-1700 Walnut Street Building
San Francisco, 4.....1577—200 Bush Street
Seattle, 1.....1368 Henry Building
Tulsa, 3.....1666 Hunt Building
Washington 6, D. C.....1170 Cafritz Building

Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY, and GREENVILLE, PA.
In Canada: HORTON STEEL WORKS, Limited, FORT ERIE, ONT.

● Did you know you can get a READING CRANE that's CUSTOM-BUILT *at no extra cost* to solve your specific materials handling problem?

When you order a READING CRANE, our engineers offer you a choice of several interchangeable motor, trolley and hoisting units. The crane is then "tailor made" to your own job requirements.

Known as UNIT CRANE DESIGN, this unique method of crane construction gives you far greater operating efficiency. Then too, your maintenance costs are reduced because any one unit can be removed for overhauling or repair without dismantling any other unit.

See your nearest distributor for more information on how READING UNIT CRANE DESIGN can give you better materials handling at less cost. And for your free copy of "The Why and How of Faster Production", drop us a line, today.

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CHAIN HOISTS • ELECTRIC HOISTS
OVERHEAD TRAVELING CRANES

READING CRANES

MATERIAL PRICES

Aluminum sulfate:		
coml. bags, wks.....cwt.	1.65	
iron-free, c.l.	3.25	
Alcohol, ethyl:		
tax free, dms. c.l.....gal.	1.01	/ 1.05½
deld. East Miss.		
Alcohol, methyl:		
Synthetic, Zone 1, dms.		
c.l. fit. alld.....gal.	.44	
Casein, acid prec.:		
dom. sh. pt. c.l. .....lb.	.34	/ .38
imp. ex. dock .....lb.	.22	/ .28
Caustic soda:		
c.l. wks. solid, 76% cwt.....	3.35	
flak. & grd. 100-lb. drums...	3.75	
liquid 50% tanks....	2.55	
liquid 70% tanks....	2.65	
China clay:		
dom. air-float. c.l. wks. ton	10.00	
water-washed, lump, filler....	11.00	
coating	17.60	/30.50
imported, ex whse...short ton	15.20	/28.35
Chlorine:		
single-unit tanks, works..cwt.	2.70	
multi-unit .....cwt.	3.20	/ 4.40
Formaldehyde:		
USP, inh. dms, c.l. wks....lb.	.0625/	.0675
l.c.l., E. wks.....	.0675/	.0725
Fuel oil:		
Bunker C, No. 6 Cal. hvy.		
tanks, refinery ..... bbl.	1.95	/ 2.15
light ..... bbl.	2.00	/ 2.25
Hydrogen peroxide:		
USP, 35% cbys. E. of Miss. lb.	.23½/	.26½
Lime:		
hydrated, bags, wks. .....tons	13.50	
Rosin:		
B gum, drms, c.l. Savan..cwt.	7.00	/ 9.08*
K, M, N .....cwt.	7.86	/ 9.49*
FF, wood, do.....cwt.	6.80	/ 7.30*
* OPS Ceiling, CPR 52.		
Rosin size:		
70%, gum & pale grds, tank cars, south, sh. pt. .....cwt.	6.60	/ 6.70
Salt cake:		
dom. bulk, c.l. wks.....ton	17.00	
wks. frt. all.....ton	20.00	/22.00
Soda ash:		
light, 58%, bags, wks.....	1.50	
bulk ....cwt.	1.20	
Sodium silcate, 40°:		
turbid. c.l. wks.....cwt.	1.30	/
l.c.l. wks.	1.60	/ 1.85
Sodium peroxide:		
dms. c.l. E. of Miss.....lb.	.21	
l.c.l. do. .....lb.	.21½/	.22
Soybean, protein:		
chem. isol, wks, c.l.....lb.	.24	/ .28
Cinn. and Chic.		
Sulfuric acid:		
60° Be. cbys. c.l. wks.....cwt.	1.75	/ —
l.c.l. wks. .....cwt.	2.05	/ 2.85
Sulfur:		
crude, c.l. mines, contract, long ton	21.00	/22.00
f.o.b. vessels Gulf	22.50	/23.50
Sulfur dioxide:		
liquid, coml. cyl. wks.....lb.	.09	
multi-unit cars .....lb.	.0535	
Starches:		
pearl corn, bags, c.l. wks..cwt.	6.44	/ —
white dextrines, c.l. wks...cwt.	7.83	/ —
potato, Idaho, c.l. wks....cwt.	6.50	/ —
potato, Maine, c.l. wks....cwt.	nominal	
tapioca, conv. dextrines...cwt.	6.75	/ 8.00
Talc:		
domestic, 50-lb. sacks, c.l. wks. .. ..ton	25.00	/30.00
Titanium dioxide:		
anastase, c.l. deld., bags...lb.	.21	/ .21½
l.c.l. deld. .....lb.	.22	/ .22½
rutile, c.l. deld.....lb.	.23	/ .23½
l.c.l. deld. .....lb.	.24	/ .24½

NEW LITERATURE

American Wheelabrator & Equipment Corp., Mishawaka, Ind. Catalog 72-B, "Dust and Fume Control." Describes various sizes and models of Dustube Collectors (cloth-tube type), and the advantages to be gained from cloth filtration.

Bakelite Co., Division of Union Carbide and Carbon Corp., 300 Madison Ave., New York 17, N. Y. Booklet, "Condensed Reference File of Bakelite and Vinylite Plastics and Resins." Featuring: Molding and Extrusion Materials; Flexible Film and Sheeting; Protective Coating Resins; Rigid Sheets; Calendering Resins; Laminating, Bonding, Adhesive Resins.

Foster Wheeler Corp., 165 Broadway, New York 6, N.Y. Bulletin, "Heat Engineering." Featuring: Three-Two-stage Crude Units—Capacity 210,000 Barrels Per Day; Ancient City Gets Modern Boilers for Public Utility; The Design and Application of Waste Heat Boilers; Three Two-cell Cooling Towers at a Pharmaceutical Plant; Package Steam Generator Equipped With Two Burners.

Link-Belt Co., 307 N. Michigan Ave., Chicago 1, Ill. Book No. 2444, "PA Positive Action Oscillating Conveyors." Includes dimensions, weights, and capacity and horsepower charts for heavy- as well as light-duty applications.

Mine Safety Appliances Co., Braddock, Thomas and Meade Streets, Pittsburgh 8, Pa. Bulletin, "M. S. A. All-Purpose Plastik-Plated Work Gloves." Sales and technical copy.

Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne and Windrim Avenues, Philadelphia 44, Pa. Brochure, "Tomorrow is Today." Tells a small part of the story about process instruments and their importance to industry—defense and general.

The Noble & Wood Machine Co., Hoosick Falls, N. Y. Booklet, "The Agitator." Featuring: Papermaker of the Month. Anton M. Lund, Vice-Pres. Engineering & Equipment, Hudson Pulp & Paper Co.; and SCA—The Swedish Giant.

Government Printing Office, Washington 25, D. C. National Bureau of Standards Circular 514, IV. "Table of Dielectric Constants of Pure Liquids." Compiled by Arthur A. Maryott and E. R. Smith. Part of a program for critical examination of the data of physics and chemistry, sponsored by the National Bureau of Standards in cooperation with the Committee on Tables of Constants and Numerical Data of the National Research Council and the Commission on Tables of Constants of the International Union of Chemistry. Contains sections on standard liquids, inorganic liquids, and organic liquids, and a complete list of references. 44 pp. Price 30c. Foreign remittance must be in U. S. exchange and include additional one-third price to cover mailing.

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PAPERMAKING PROBLEMS...

Bagley and Sewall's constant research and development, not only in theory but in the direct application of newly designed machinery to papermaking problems has resulted in the most practical and economical machinery designs for present day competitive paper mill operation...We invite paper mill inquires to our engineering staff for information and survey applications of the latest Bagley & Sewall papermaking machinery developments for either mill modernization or expansion programs.

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630 Fifth Ave., Rockefeller Center, New York 20, N.Y.

New York Belting and Packing Co., 1 Market St., Passaic, N. J. Catalog giving necessary data to lay out a drive or specify a belt. Includes tables on carrying capacities, horsepower factors, pulley diameters, maximum and minimum plies for proper troughing and other engineering information.

Horace T. Potts Co., Erie Avenue and D. Street, Philadelphia 34, Pa. Catalog illustrating types and sizes and features of Speedline corrosion-resistant fittings now available in several stainless analyses.

Ranetite Mfg. Co., 1917 South Broadway, St. Louis 4, Mo. Circular showing the manufacture of silicone water-repellent material, a product of which is Ranetite No. 11 for masonry surface applications.

Raybestos-Manhattan, Inc., Manhattan Rubber Div., Passaic, N. J. Bulletin 6830 B, "New Improved Manhattan Single Groove V-Belts." Includes new standardized belt numbers and a list of standard sizes of belts.

Rockwood Sprinkler Co., 38 Harlow St., Worcester 5, Mass. Catalog CP-7-50M-51, "Rockwood Fire Fighting Products." Complete with technical information and illustrations.

Stephens-Adamson Mfg. Co., Aurora, Ill. Bulletin 951, "The SA Conveyor." Featuring: Baltimore and Ohio Ore Dock; Chemical Potash Moved in Redlers; Handling Cellulose Ester, etc.

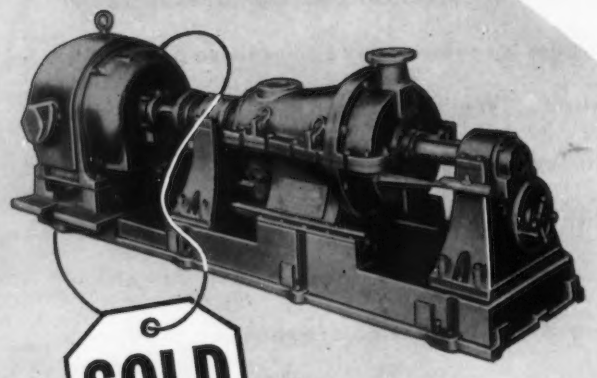
Ultra-Violet Products Inc., South Pasadena, Calif. Bulletin, "The Revolutionary High-Output: Self-Filtering Blak-Ray Ultra Violet Long Wave (3660 A. U.) Tubes and Fixtures with Spectral-Finish Aluminum Reflectors." Technical and sales copy . . . Bulletin, "Ultra-Violet Fluorescent Paints for Every Purpose," also technical and sales copy.

Westinghouse Electric Corp., Lamp Div., Bloomfield, N.J. Booklet, A-6007, "Fluorescent Mercury Lamp, JH-1." Gives comparisons with light from other lamp sources, and complete tables of technical and transformer data.

Grinnell Co. Inc., Providence, R. I., Book, "Piping Design and Engineering," first edition, 250 pp., price $10. Compiles engineering and technical data for those engaged in the design and application of pressure piping systems. Treats Expansion and Stresses; Velocity Drop; Piping Materials, Fabrication, Hangers and Supports.

Wm. L. Barrell Co., 52 Chanucy St., Boston, Mass. Book, "Barrell's Paper Annual," Vol. X, 1951-52. The company announces that the small remainder from the complimentary distribution of this edition is available to anyone connected with the manufacture of paper. Includes "Paper Trade Terms," a glossary for the allied trades compiled by William Bond Wheelwright of Callaway Associates, 172 Summer St., Boston, Mass., which sells separately for $2.50.

SUCCESS STORY



SOLD 922* to May 1, 1951

Ed Jones

More units sold of this "mighty mite of stock preparation" than of *any* other refiner . . . anytime, anywhere: that's the success story of the Jones HIGH-SPEED REFINER.

The reason? In installation after installation, this Refiner has chalked up impressive power savings—while giving better preparation of stock, more flexibility and better control.

Ask your Jones representative how it can improve your stock preparation, or write for Bulletin 1011B.

***NOT counting those made by imitators.**

Ed Jones

HIGH-SPEED REFINER

E. D. Jones and Sons Company, Pittsfield, Mass.

BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

TAPPI Program

(Continued from page 34)

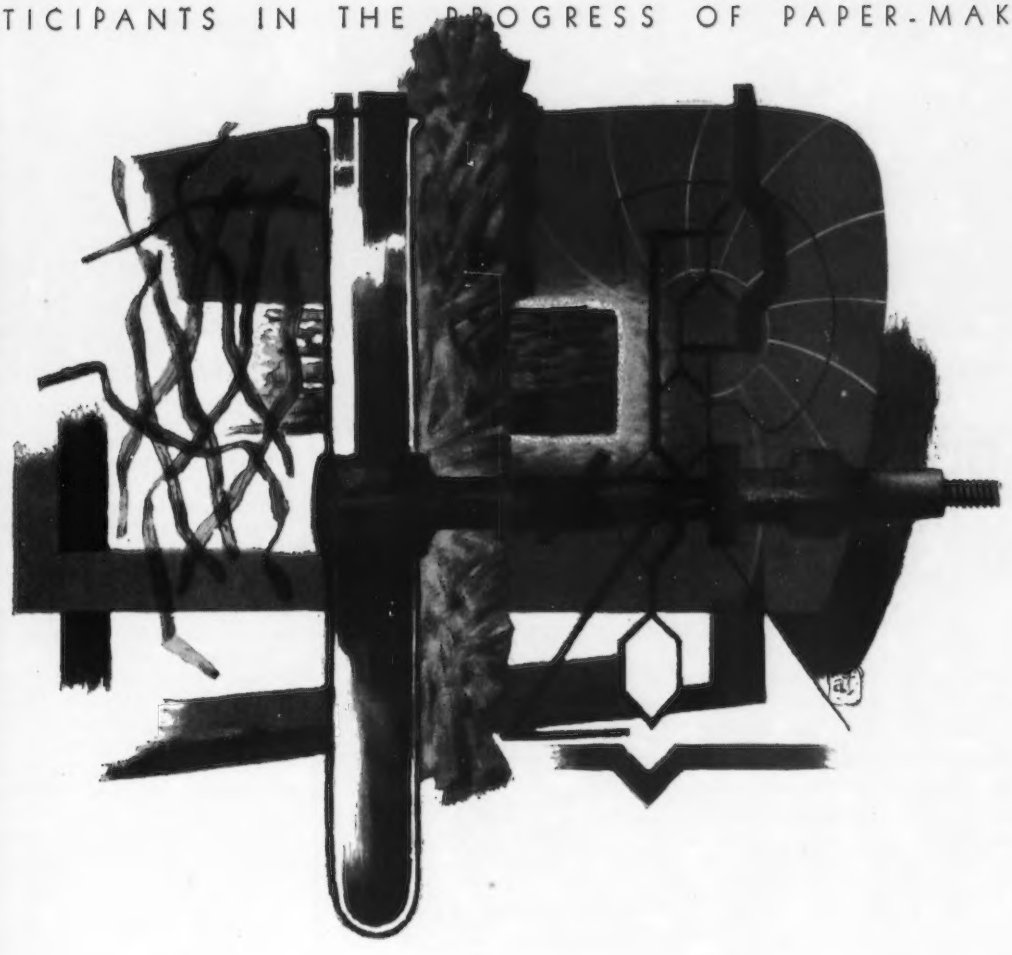
3. Stability Tests, G. P. HINDS, JR., *Chairman*
4. Sensory Tests, G. D. FRONMUELLER, *Chairman*
5. Composition, J. B. RATHER, JR., *Chairman*
6. Blocking, M. W. KANE, *Chairman*
7. Sealing and Laminating, G. C. BORDEN, JR., *Chairman.*
8. Scuff-Glass, G. P. MUELLER, *Chairman*

2:00 p.m. Alkaline Pulping and Chemical Engineering (West Ball Room); HENRY VRANIAN and J. R. LIENTZ, *Chairmen*

Symposium on "Semichemical Pulping."

1. "Semichemical Process Flow Sheets," by J. E. Sapp Gaylord Container Co., Bogalusa, La.
2. "Corrosion Problems in Semichemical Pulping," by H. O. Teeple, International Nickel Co., New York, N. Y.
3. "Semichemical Liquor Preparation and Recovery," by R. P. Whitney, Institute of Paper Chemistry, Appleton, Wis.
4. "Semichemical Pulping of New England Woods," by Daniel J. Adams, Bird Machine Co., East Walpole, Mass.
5. "Some Notes on the Semichemical Process, Process Design and Equipment," by C. W. Converse, Sprout, Waldron & Co., Muncy, Pa.

PARTICIPANTS IN THE PROGRESS OF PAPER-MAKING



Chemicals . . . produced by an industry which has made magnificent contributions to paper-making progress through applied research.

Fourdrinier Wires . . . fabricated for 56 years by Appleton Wire Works, Inc., where continuous research – directed toward making a better product—has *earned* the acknowledgment that *"Appleton Wires are Good Wires!"*

APPLETON WIRE WORKS, INCORPORATED • APPLETON, WISCONSIN

2:00 p.m. Papermaking (Cylinder) (Room A); JAMES J. HARRISON, Michigan Carton Co., Battle Creek, Mich., *Chairman*

1. Round-Table Discussion on "Wet End Forming and Pressing on Cylinder Machines."

2:00 p.m. Papermaking (Fourdrinier) (Room G); N. R. PHILLIPS, *Chairman*

1. Round-Table Discussion on "Tissue Paper Manufacture."

2:00 p.m. Container Testing (Room F); C. H. KREBS, Atlas Boxmakers, Inc., Chicago, Ill., *Chairman*

1. Committee Meeting.

THURSDAY, FEBRUARY 21, 1952

9:00 a.m. Chemical Methods and Pulp Testing (West Ball Room); A. S. O'BRIEN, Eastmann Kodak Co., Rochester, N. Y., and L. V. FORMAN, Scott Paper Co., Chester, Pa., *Chairman*

1. "The Determination of Copper in Wood Pulp with Tetraethylenepentamine," by R. M. Kingsbury and C. L. Lake, Forest Products Laboratory, Madison, Wis.
2. "Determination of Pentosans in Highly Purified Wood Pulp," by Edgar D. Smith, Louis F. Pagel, and L. N. Rogers, Buckeye Cotton Oil Co., Memphis, Tenn.
3. "A Colorimetric Method for the Determination of Pentosan Content of Highly Refined Pulps," by T. Davis and A. S. O'Brien, Eastmann Kodak Co., Rochester, N. Y.
4. "On Sampling of Wood Pulp for Moisture," by A. P. Bollinghausen, Kimberly-Clark Corp., Neenah, Wis.
5. "Accuracy of the TAPPI Pulp Moisture Testing Procedure," by L. M. Tyler and C. E. Brandon, Howard Paper Mills, Inc., Dayton, Ohio.
6. "Paper," by B. L. Browning, Institute of Paper Chemistry, Appleton, Wis., and Paul E. Trout, American Box Board Co., Filer City, Mich.

9:00 a.m. Fibrous Agricultural Residues (Room B-C); S. I. ARONOVSKY, Northern Regional Research Laboratory, Peoria, Ill., *Chairman*

1. Round-Table Meeting on "Straw Utilization Problems."

9:00 a.m. Papermaking (Cylinder) (Room A); JAMES J. HARRISON, *Chairman*

1. Round-Table Discussion on "Stock Cleaning and Refining of Waste Paper for Use on Cylinder Machines."

1:00 p.m. Annual Luncheon (Grand Ball Room); KENNETH P. GEOHEGAN, President TAPPI, *Presiding*

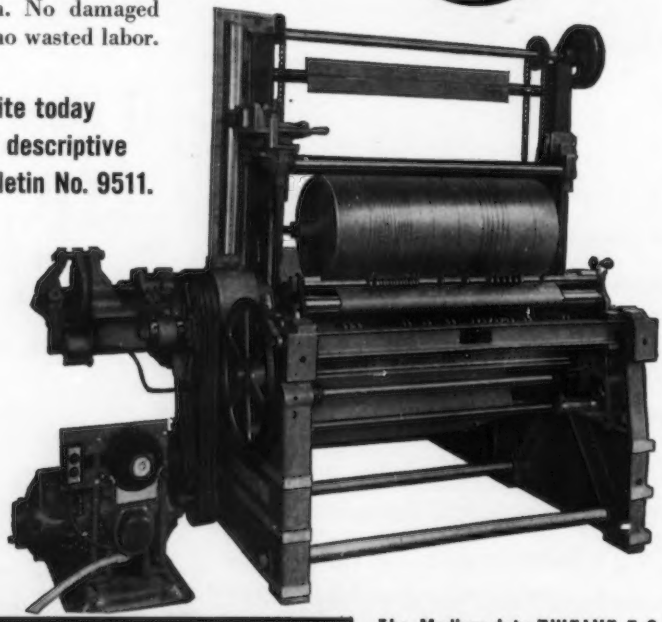
1. Introduction of Guests.
2. Presentation of the TAPPI Medal to Raymond S. Hatch, Hudson Pulp & Paper Co., Palatka, Fla., by Robert B. Wolf, Consultant, New Canaan, Conn.
3. "Scientific and Technical Manpower Problems," by Walter J. Murphy, Editor, Industrial and Engineering Chemistry, Washington, D. C.

Now... Perfect Roll S-E-P-A-R-A-T-I-O-N

Any dry, uncoated paper can now be slit and rewound into *freely separable* rolls of any width with the new Johnstone TWELVE and FOURTEEN F-S Slitters & Roll Winders. There's nothing to compare with them in the industry. For the first time, hammering and prying are made completely unnecessary in the finishing room. No damaged rolls... no wasted labor.

FREELY S SEPARABLE

Write today for descriptive bulletin No. 9511.



JOHNSTONE
Engineering & Machine Co.
PARKESBURG, PENNA.

The Medium-duty TWELVE F-S has 4" winding drums. Standard sizes handle rolls 32", 42", and 52" wide; rewound diameters up to 24". The FOURTEEN F-S, for heavy duty, has 6¼" winding drums. Standard sizes take rolls 42", 52", 62", 72", & 82" wide rewound diameters up to 36".

New Equipment

(Continued from page 36)

maximum extinguishing effect on fire yet coarse enough to be discharged in a long-range stream. Repellent to moisture, it also is said to be non-abrasive and corrosion-free, and harmless to everything but fire.

Finger-tip nozzle control is designed to prove quick, easy-controlled blasts of powder when needed, and to assure complete shut-off to conserve unused chemical. Other construction features assure from 95 percent to complete discharge of tank contents. A large, easy-to-hold handle makes carrying easy and provides leverage to puncture the pressure cartridge by downward thrust.

Flexible Electric Heating Cable

A new flexible electric heating cable has been introduced to the industrial and consumer fields by Edwin L. Wiegand Co., 7740 Thomas Blvd., Pittsburgh 8, Pa. Known as Thermwire, the cable consists of a heavy gauge nickel-chromium resistor wire with tough abrasion-resistant insulating sheath. It is designed to protect roofs, gutters, and downspouts from dangerous and costly accumulations of snow and ice. Embedded in asphalt or concrete, it melts ice from hazardous doorways, steps, sidewalks, driveways, or

Process machinery housings wrapped with Thermwire and covered with insulation to prevent condensation from falling into material being processed immediately below. Similar wrap-around installations prevent freezing and keep water and viscous fluids running in pipe lines under below-zero conditions.

other pavements; prevents freezing of pipes; heats soil for faster seed germination and plant growth; and provides an easy solution in many other circumstances where a portable, pliable, efficient heat source is required on-the-spot to cope with cold weather problems.

SUPPLIERS

Peter J. Abel

SANDY HILL IRON & BRASS WORKS announces that Peter J. Abel has become associated with its sales engineering staff. Mr. Abel has been with Stickle Steam Specialty Co. since 1926. He will continue to represent Stickles in the paper mill steam control and condensate systems.

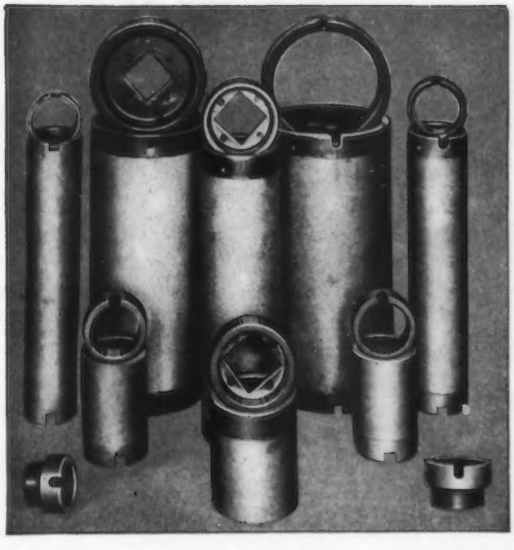
HERCULES POWDER CO.'S Paper Makers Chemical Department at Holyoke, Mass., have announced two new posts for members of the administrative sales personnel.

C. H. Kent, District Manager, will assume the duties of Special Sales Representative in New York and New England.

Henry L. Mellen, assistant manager since 1946, has been named District Manager.

C. H. Kent

H. L. Mellen



ELIXMAN CORES CAPS

Straight wound paper cores made in sizes from 2" to 10" inside diameter with any thickness wall required.

Long draw protected slot caps of heavy gauge steel in all standard sizes.

Heavy duty caps with reenforced square hole. This patented feature of reenforcement gives added strength and durability.

Samples of caps or cores will be gladly submitted

ELIXMAN PAPER CORE COMPANY, INC.

CORINTH, N. Y.

MORNINGSTAR, NICOL, INC., hundred-year-old manufacturers of starches, dextrines and adhesives, has elected George J. Muller of New York as president. Joseph Morningstar, retiring president, now becomes chairman of the board of directors. Mr. Muller, formerly the executive vice-president, has been a member of the board of directors since 1930.

DOW CHEMICAL CO. has formed two new wholly-owned subsidiaries of which William R. Clulo, native of Marquette, Mich., is an officer.

Dow Chemical Inter-American will handle the parent company's business affairs in Mexico, Central and South America and the West Indies, while the latter will perform similar functions in Europe, Asia, Africa and Australia. Among other activities, they will take over the functions of Dow's present export sales department.

Identical officers and directors were named for the two new firms, headed by Clayton S. Shoemaker, Dow's former eastern sales manager, as president. Howard R. Ball, former export sales manager, will be sales manager of the subsidiaries, and Mr. Clulo, former accounting department supervisor, has been named treasurer and assistant secretary.

Protect your investment....

with a **SMITH & WINCHESTER MODEL "E"**

UNDERCUT TRIMMER

Completely new and massive design, heavy duty construction, two-hand starting, illuminated index tape, and push button controls for electric power back gauge drive. (Gear guards have been removed to show main drive.)

Paper Making Machinery Bag machinery for single and multi-wall bags of pasted and sewed valve type Rotary Spot Cutters, hand or automatically controlled Shower Pipes.

YOUR investment in finished stock is large, particularly just before the trimming operation. Rejects and spoiled work resulting from faulty or inaccurate trimming are costly. Protect this investment with Smith & Winchester Model "E" Trimmers designed to meet today's needs for fast production, hairline accuracy and safety. Look into all the new features of the Model "E" Trimmer. ***Write for Bulletin!***

THE SMITH & WINCHESTER *Manufacturing Company*
SOUTH WINDHAM, CONN.

SERVING THE PAPER INDUSTRY SINCE 1845

SPRACO NOZZLES

Write for NOZZLE CATALOG

MANUFACTURED BY
SPRAY ENGINEERING CO.
121 CENTRAL STREET, SOMERVILLE 45, MASS.

FAIRBANKS-MORSE sales organization announces that J. A. Cuneo, formerly manager of the Chicago Branch, has been promoted to the position of general sales manager. H. L. Hilleary will continue as assistant sales manager. Milo C. Roy, formerly manager of the Omaha Branch, has been appointed manager of the Chicago Branch. J. W. Wright, formerly manager of the Diesel Sales Division, with headquarters in Chicago, has been appointed manager of the Omaha Branch. C. E. Dietle, formerly Diesel Department manager of the Chicago Branch, has been promoted to the position of manager of the Diesel Sales Division. W. B. Wylly, formerly manager of the Houston, Texas, Sub-Branch, has been appointed manager of the Atlanta Branch. L. A. Weom, formerly manager of the St. Louis Branch, has been transferred to St. Paul where he has taken over the duties of branch manager succeeding A. C. Thompson who has retired after forty-five years of service. Clifford J. Schroeer, formerly Diesel Department manager of the St. Louis Branch, has been promoted to manager of the St. Louis Branch succeeding L. A. Weom.

ADEX MANUFACTURING CO. established in Baltimore, Md., in 1879, and one of the oldest paste and gum manufacturers, has been purchased by New York interests. The new management is planning an extensive development program which will result in new and larger facilities. In addition, a long-time contract has been negotiated whereby Adex will have available the combined research, technological and service facilities of Federal Adhesives Corp. and Federal Latex Corp., both of Brooklyn, N. Y.

Officers of the Adex Manufacturing Co. are Arthur Mayer, president; Harold D. Stone, vice-president and resident manager; Mortimer E. Stern, secretary and technical director; and Philip M. Liner, treasurer.

Mr. Liner is also president of Federal Adhesives; Mr. Mayer is vice-president and Mr. Stone is president of Federal Latex Corp.

QUAKER RUBBER CORP., Div. of H. K. Porter Co., Inc., Philadelphia, Pa., elected H. H. Sossaman vice-president in charge of commercial development.

PERMUTIT CO. has appointed Clyde R. Poore, effective January 1, 1952, as assistant sales engineer for its sales office at 831 E. Morehead street, Charlotte 3, N. C.

CORN PRODUCTS REFINING CO. has elected J. Albert Woods as a director.

Mr. Woods is president and a director of the Commercial Solvents Corp. and director of Southern States Bag Co. and Thermatomic Carbon Co., among others.

WHITNEY CHAIN CO. has appointed J. Henry Anthony, manager of the Industrial Engineering Division, plant superintendent in addition to his existing duties. Mr. Anthony has been associated with Whitney in various factory production capacities for the last 12 years. Prior to joining Whitney Chain in 1940, he was in charge of the Manufacturing Division of Manning, Maxwell and Moore, of Bridgeport, Conn., producers of valves and industrial gauges. He was also formerly associated with the Kron Scale Co., Bridgeport, Conn., producers of industrial scales, as General Manager and Assistant Treasurer. Mr. Anthony is a member of the Hartford Foremen's Club and the American Assn. of Tool Engineers.

BABCOCK & WILCOX CO., Beaver Falls, Pa., produced seamless stainless steel tubing on the new hot extrusion facilities of the Tubular Products Division for the first time in December. The announcement revealed that the B&W plant is the first in the United States, designed specifically to produce stainless steel tubing by the "Ugine-Sejournet" extrusion process, to be placed in actual operation.

CUTLER-HAMMER, INC., Milwaukee, Wis., manufacturers of motor control, have appointed Philip Ryan executive vice-president in addition to his duties as vice-president in Charge of Manufacturing. R. A. Millermaster has been appointed manager of the Development Department, and C. W. Kuhn, director of development engineering for the company.

A. E. STALEY MANUFACTURING CO., corn and soybean processor, has appointed Wendell Ray, formerly price and market analyst in the home office at Decatur, sales representative in Staley's Philadelphia office. Clint A. Pickett has been appointed a sales representative in Staley's Chicago office.

SHARPLES CHEMICALS, INC., has combined with the PENNSYLVANIA SALT MANUFACTURING CO. through an exchange of common stock.

For the present, Sharples will continue to operate as a separate unit of Pennsalt, with, however, an exchange of technical information and coordination of some policies to the mutual benefit of both organizations.

HERCULES POWDER COMPANY, Wilmington, Del., announces the election of Albert E. Forster as vice president and member of the executive committee. Paul Mayfield has been appointed general manager of the Naval Stores Department, succeeding Mr. Forster to that position.

The election of Mr. Forster to a vice presidency fills a vacancy created by the retirement last week of Petrus W. Meyeringh because of ill health.

MORDEN MACHINES CO.'s president, R. Burke Morden, is traveling from Portland, Oregon, to the February TAPPI meeting in New York City via Central and South America. During the trip he will visit the nearly 50 Morden "Stock-Maker" installations in Mexico, Argentina and Brazil, as well as mills in Peru and Chile.

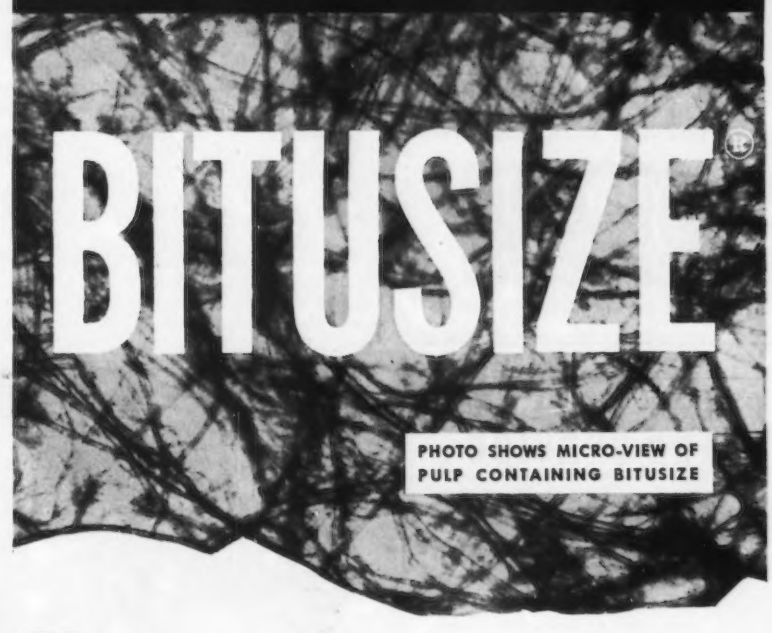
LYNCH CORP. has appointed Richard H. Werbe, as assistant to its president. Mr. Werbe has been associated with Lynch since 1946, having been connected with the Package Machinery Division in Toledo, Ohio, for a number of years prior to transferring to the Glass Machinery Division in Anderson.

HEYDEN CHEMICAL CORPORATION, New York City, announces the appointment of James P. Scullin, formerly with Rohm and Haas Company, to the staff of the Market Development Department.

Joseph A. Trivisone, a recent graduate of Wagner College, also has joined the staff of Heyden's Market Development Department.

E. I. DUPONT CO. of Wilmington, Del., has announced the retirement, effective Feb. 1, 1952 of Lloyd E. Kelly, New York City, manager of eastern sales for the Pigments Department. Mr. Kelly has been with DuPont for 30 years. He will be succeeded by Walter J. Beasten, pigments salesman in the Philadelphia sales office.

For hard sizing without machine slow-down...



You can gain wide degrees of waterproofing and sizing plus high dry and wet strength with BITUSIZE B. Bitusize reduces foaming, increases machine speed, pushes production up.

BITUSIZE B is a ready-flowing emulsified asphalt sizing agent you can pump, store and handle easily without special equipment.

BITUSIZE A ADHESIVE EXTENDER—Higher solids, more uniform gluelines at less cost, higher waterproofing value.

ORDER BITUSIZE IN TANK CARS OR DRUMS

AMERICAN Bitumuls & Asphalt COMPANY

200 BUSH ST. • SAN FRANCISCO 4, CALIFORNIA

Providence 14, R. I. Perth Amboy, N. J. Baltimore 3, Md. Columbus 15, Ohio
St. Louis 17, Mo. Mobile, Ala. Baton Rouge 2, La. Tucson, Ariz. Inglewood, Calif.
Oakland 1, Calif. Portland 7, Ore. Seattle, Wash. Washington 6, D. C. San Juan 23, P. R.

The Controlled Flow

VICTORY BEATER

is manufactured by

THE NOBLE & WOOD MACHINE CO.

Paper Mill Machinery

Hoosick Falls • New York • U. S. A.

RAG CUTTERS

FOR ROOFING
AND FINE WRITING
PAPER MILLS

Capacities from one
to five tons an hour.

TAYLOR-STILES and Company
CUTTING MACHINES & KNIVES

10 Bridge Street, Riegelsville, N. J.

FIBER RESEARCH AND SERVICE

Semi-Chem. and
Chemical Pulp
Processes

Pilot Plant Facilities

THE KINSLEY CHEMICAL COMPANY
Cleveland 11, Ohio

MISCO
STAINLESS STEEL CASTINGS

FOR ALL EQUIPMENT
EXPOSED TO CORROSION BY SULPHITE ACIDS
OR OTHER CORROSIVE
AGENTS

MICHIGAN STEEL CASTING CO.
DETROIT 7, MICHIGAN

BAKER-RAULANG CO. has appointed Maynard W. McMillan representative for the Baker line of industrial trucks in the southwestern Ohio territory. Mr. McMillan's headquarters will be at 2820 Jessup Road, Cincinnati. The territory includes Cincinnati, Hamilton, Middletown, Dayton, Springfield and Portsmouth in Ohio, Covington and Newport in Kentucky, and Lawrenceburg in Indiana.

RUST ENGINEERING CO., has appointed George L. Jordy Manager, Chimney Division. Formerly assistant manager of the Division, Mr. Jordy succeeds Eric Plagwit who was elevated to the newly created position of special representative and chimney consultant. Mr. Plagwit has been with Rust since 1924. He will continue to have his headquarters in Pittsburgh.

CHEMIPULP PROCESS LTD. announces that A. H. Lundberg, consulting chemical engineer, 308 Orpheum Bldg., 1900 Fifth Avenue, Seattle 1, Wash., will again represent Chemipulp Process Inc. and Chemipulp Process Ltd. on the Pacific Coast both in the United States and Canada. Mr. Lundberg represented Chemipulp on the Pacific Coast from 1936 until 1945, therefore, Mr. Lundberg is very familiar with all of the company's equipment and processes. His territory will include Alaska, Washington, Oregon, California, Idaho, Montana, Colorado and Nevada and all of the western provinces of Canada.

WALTON LABORATORIES of Irvington, N. J., manufacturers of industrial and domestic humidifiers, have opened a new sales office and showroom at 30 N. La Salle street, Chicago, Ill., where the complete line of Walton humidifiers will be displayed.

PIERCE CONSULTING ENGINEERING CO., with offices at 183 Essex Street, Boston, has appointed Edward H. Barry president and engineering manager. Mr. Barry was formerly with Stone & Webster Engineering Corp.

WESTINGHOUSE ELECTRIC CORP.'S Apparatus Division has appointed George E. Goodrich to the position of assistant manager of the industrial department.

DU PONT CO.'S Pigments Department has appointed Roy E. Troutman sales manager for white pigments. He moved up from his post of assistant sales manager, succeeding William R. Morpeth, who is continuing in an advisory capacity pending his retirement later in the year.

PAPER & INDUSTRIAL APPLIANCES, INC., 122 E. 42nd street, New York, will be known as PANDIA INC. The name PANDIA has come into wide use among the many friends and customers of the company during the years of its association with the pulp and paper industry. Because of this, the company thought it appropriate for permanent use.

Audenried Whittemore
President

Leonard G. Durant
Vice President

R. G. Goodwin
Director of Sales Engineering

PANDIA INC. is best known for its work in the development of continuous cooking. It has developed two pieces of equipment for this purpose —the Chemi-Pulper continuous digester and the Morley continuous pulper. It is also recognized for its success in special designs of the Brammer Recording Consistency Control to meet actual mill conditions.

PANDIA INC. is a change in name only. There will be no change in policy, organization or management. Officers of the company are pictured above. PANDIA'S equipment is manufactured in the U.S.A. by PANDIA INC. and in Canada by Alexander Fleck Ltd., and is sold throughout the world.

Jordan Shell and Plug Fillings

TRADE-MARK

POSITIVE

Reg. U. S. Pat. Off.

High Speed Disc Refiner

THE BAHR BROTHERS MFG. CO.
MARION, INDIANA, U.S.A.

Customs Court Rulings

That mimeograph paper is not automatically dutiable as a printing paper is described by Warren B. Bullock, manager of the Import Committee of the American Paper Industry, as the effect of a decision by Customs officials in a case involving the importation of various qualities of mimeograph paper from Sweden at Seattle, Wash., claimed to be dutiable as printing paper at 1/5 cent per pound and 5 percent. Seven grades were involved, and submitted to representative domestic writing and printing paper mills for their opinions. All of the papers were in writing paper sizes. All but one of the samples were held to be dutiable as writing paper at 1½ cents per pound plus 10 percent for the sizes under 100 square inches in size (8½ x 11 inches) and at 1½ cents per pound plus 7½ percent for the larger sizes (8½ x 14 inches). Although the papers were basically for mimeograph use, the quality was such that they readily took pen and ink writing, and were therefore held to be of writing paper quality. One sample, not susceptible to use with pen and ink, was classified as printing paper. The claim has been made that all mimeograph papers are dutiable as printing papers because they are used for printing purposes in mimeograph machines. The industry opinions, sustained by the officials, were that classification should be based on the character of the paper, not on the end use.

Christmas wrappings imported at Portland, Ore., from Sweden, have been held to be dutiable at 4½ cents per pound plus 10 percent as paper with surface design. It had been thought by the officials that the paper might have been decorated by lithography, but industry opinions held to the contrary. The above rate, effective on the Portland importation, is cut in half on future shipments as a result of the Torquay Reciprocal Trade Agreement negotiations.

High grade glassine papers imported from England, but made in Austria, Belgium and France, have been held by Customs officials to have been undervalued about 20 percent, and assessed with duty at the higher value.

Resin Laminated Paper Classified

The development of various plasticized papers in the United States has been followed by efforts of foreign manufacturers to ship competitive products into the United States, but the Import Committee of the American Paper Industry has already secured a ruling from Customs officials which materially increases the amount of duty to be collected on one such product. Importations of material composed of an absorbent kraft paper base with layers laminated with synthetic phenol resin had been claimed to be dutiable as wallboard at 10 percent, or as laminated paperboard at $7.25 per ton. The Customs officials however, have held that this product is not dutiable under the paper schedule, but under a special provision for laminated products in which synthetic resin is the chief binding agent, at 7½ cents per pound plus 12½ percent ad valorem. With this ruling as a precedent the Import Committee believes that other plasticized papers and paperboards, in which the phenol resin is the component of chief value, should be classified for duty under the higher duty provisions of the chemical schedule, rather than under the low rates of the paper schedule.

AUSTRALIAN NOTES

There was a marked increase in the newsprint imports into Australia in the month of September, 1951, rolls totalling 15,098 tons against the previous month's 9,216 tons, and sheets totalling 338 tons against 124 tons.

With the coming in of Canadian newsprint and increased production in Australian newsprint mills, the present abnormal price of newsprint may disappear in 1953 or even in the latter half of this year, says president Frank Packer of the Australian Newspapers' council. "Even at the risk of being called unduly optimistic," he adds, "I am certain that the ceiling price for newsprint, so far as Australia is concerned, has been reached."

The Prime Minister of New Zealand (Mr. Holland) announces that the Government has accepted the proposals of a group of New Zealand and American companies to launch the production of newsprint and pulp. "This new industry," says Mr. Holland, "which should be established within three years, should save this country millions of dollars annually, while the entire sterling area will benefit by a still greater saving of dollar expenditure. New Zealand will, in the future, have not only an ample supply of newsprint and allied products for her own requirements, but will have a large surplus for export." Arrangements for overseas financing of the new project will be one of Mr. Holland's main tasks following the Finance Ministers' conference in London.

* * * *

The proposals have been put forward by the Tasmanian Pulp & Paper Co. in which both American and New Zealand firms are associated, but the entire management and financial control will be held within New Zealand. In the opinion of experts, New Zealand can grow suitable newsprint timbers faster than any major pulp-producing country in the world. New enterprise is expected to cost some £32 million.

* * * *

Sir Norman E. Brookes, chairman of Australian Paper Manufacturers Ltd., announces that commencing about 15 months hence and continuing progressively over the ensuing 18 months to two years, the company's capacity should increase rapidly from the present 150,000 tons a year of paper and

CHAS. T. MAIN, INC.
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Consulting Engineers to
The Paper Industry
Since 1929

APPLETON Felts
FOR DEPENDABILITY

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APPLETON WISCONSIN

AMERICAN PAPER AND PULP ASSOCIATION'S PAPER PRODUCTION RATIO REPORT

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	Dec. 15	Dec. 22	Dec. 29	Jan. 5, '52	Jan. 12
1951	97.0	97.4	63.6	93.4r	99.9
	Dec. 16	Dec. 23	Dec. 30	Jan. 6, '51	Jan. 13
1950	100.1	95.2	69.2	94.2	100.0

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1950	92.6	95.6	96.7	95.4	96.4	97.7	85.3	99.6	96.1	101.0	99.6	91.2	95.8
1951	99.3	101.3	101.9	102.8	102.2	100.1	88.6	97.7	94.3	100.6‡	98.2‡	89.3‡	98.4‡

‡ Preliminary.
r Revised.

COMPARATIVE YEARLY SUMMARIES

	1944	1945	1946	1947	1948	1949	1950	1951
Year to Date Year Average	88.1	89.4	101.1	104.3	96.2	88.6	95.8	98.4‡

PAPERBOARD OPERATING RATIOS†

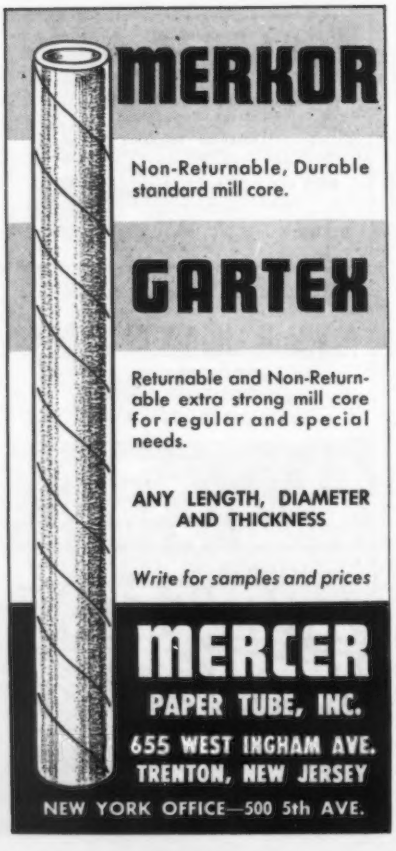
	Dec. 15	Dec. 22	Dec. 31	Jan. 5, '52	Jan. 12
1951	86	86	40	64	86
	Dec. 16	Dec. 23	Dec. 30	Jan. 6, '51	Jan. 13
1950	105	105	63	91	106

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Ave.
1952	88	92	91	92	91	94	82	100	96	102	101	95	94
1951	102	105	104	105	104	103	84	94	86	87	82	75	94

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

Note: The black line on the chart shows the ratio through December 1950 on the basis of 6-day capacity. Beginning with January 1950 the ratio is shown on the new basis of normal 6 and 7-day capacities by the colored line. Paperboard operating ratios continue on the basis of a 6-day week.

† Per cent of operation based on "inch-hours" reported to the National Paperboard Association.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Non-Returnable, Durable standard mill core.
GARTEX
Returnable and Non-Returnable extra strong mill core for regular and special needs.
ANY LENGTH, DIAMETER AND THICKNESS
Write for samples and prices
MERCER
PAPER TUBE, INC.
655 WEST INGHAM AVE.
TRENTON, NEW JERSEY
NEW YORK OFFICE—500 5th AVE.

cardboard to between 225,000 and 250,000 tons per annum. On the pulp side a like expansion is planned. At the Maryvale pulp mill, commencing in about a year's time, output will be increased from approximately 43,000 tons a year to between 65,000 and 70,000 tons. "The company," says Sir Norman, "is within measurable distance of achieving the advantages to accrue from many years of planning and work."

* * * *

Chairman Sir Walter Massy-Greene, of Associated Pulp and Paper Mills Ltd. says that increased paper output and a smaller proportion of expensive imported long-fibered pulp used during the year were the main reasons for the company's better figures. But labor shortages hampered the erection and installation of a big sawmill at Burnie, Tasmania. However, during the year the hardboard mill started producing, but output of both sawmill and hardboard mill will depend upon the availability of hydro-electric power.

Hudson To Spend Million For Advertising

Hudson Pulp & Paper Corp. has decided to set the company's annual budget for advertising at a new high of over one million dollars. Hudson's contract with CBS for the broadcast of Hudson's Bride and Groom television program has also been renewed.

Manistique to Resume Former Name

MANISTIQUE, Mich.—The Manistique paper mill will again be known by its original firm name, Manistique Pulp & Paper Co.

A few years ago the firm name was changed to Mead Corp., Manistique Division, following acquisition of the plant by Mead.

The mill, originally built for newsprint production by Minneapolis *Tribune*, resumed manufacture of publication tonnage on January 17. The plant, since January 1, when the Trenton Times Corp. took over direction of the mill, has been filling unexpired Mead contracts.

New officers and directors of the mill have been announced as follows: President, Mrs. James Kerney, Sr.; vice-president, James Kerney, Jr.; treasurer, Thomas L. Kerney; assistant treasurer, John E. Kerney; secretary, Mrs. R. G. Kuser; assistant secretary and general manager, R. G. Hentschell; sales manager, Thomas Palmer.

Members of the board of directors are: Mrs. James Kerney, Sr., James Kerney, Jr., Thomas L. Kerney, Mrs. R. G. Kuser, John E. Kerney, Mrs. Henry Welling, Mrs. J. R. McNeil and Joseph A. Kerney.

Fighting Paper Wanted

Invitation to bid has been issued by the New York Quartermaster Procurement Agency, 111 East 16th street, New York 3, N. Y. on QM-30-280-52-895, covering Cards Guide, 24,250 sets; and Cards Index, filing, various sizes, 22,750,000 bx. Bids will be opened February 7, 1952, at 10:00 a.m. (EST) at the New York office. This procurement is for the U. S. Marine Corps.

QM-30-280-52-896, covering Paper, typewriter, manifold, chemical wood, various, 1,908,905 reams. Bids will be opened January 31, 1952 at 11:00 a.m. (EST) at the New York office. This procurement is for the U. S. Army, U. S. Navy and U. S. Air Force.

QM-30-280-52-NEG-108, covering Bags, paper, kraft, (wet strength), 800,000 each. Proposals will be received until January 28, 1952 at 3:00 p.m. (EST) at the New York office. This procurement is for the U.S. Navy.

QM-30-280-52-924, covering Paper, waxed, wet process, 300 rolls; and Paper, bread wrapping, self-sealing, waxed sulphite, 1,500 rolls; and Paper, wrapping, waxed, commissary, 225 rolls. Bids will be opened February 11, 1952, at 2:00 p.m. (EST) at the New York office. This procurement is for the U. S. Navy and U. S. Marine Corps.

QM-30-280-52-938, covering paper, Map, Lithographic Finish, Coated Two Sides, White, Sub. 70, 5,033 reams. Bids will be opened January 30, 1952, at 10:00 A.M. (EST) at the New York Office. This procurement is for the U. S. Army and U. S. Navy.

CLEARING HOUSE

HELP WANTED

MEN WANTED—POSITIONS OPEN

We can place—Managers and general supts. for pulp, paper and board manufacturing and converting plants, several very fine positions paying attractive salaries for top-notch men; supts. and asst supts. for lightweight papers, papers to be converted into waxed papers, specialties, plain and coated papers, manifold, onion skin, bond, sulphite and rag papers; asst. supts. for Fourdrinier and Cylinder machine mills up to $750 month.

Chemists and chemical engineers for mills, also for selling and demonstrating; master mechanics, plant engineers, mechanical engineers, designers and draftsmen; salesmen for mechanical equipment, also fine writing papers and paper makers felts; machine foremen, Cylinder, Fourdrinier and Yankee Fourdrinier machines.

LIST YOUR CONFIDENTIAL APPLICATION WITH US to keep informed of attractive positions open in the pulp and paper mills.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St., Boston 8, Mass.

SPECIALISTS IN PLACING AND IN SUPPLYING PULP AND PAPER MILL EXECUTIVES J-25

WANTED

Technically trained man for Sales and Service Work covering the paper mills in Pennsylvania, New Jersey, Delaware, Maryland and W. Virginia; should have intimate knowledge of paper making problems. Permanent position with well established company. Address in confidence Charles P. Raymond Service, 294 Washington St., Boston, Mass., Liberty 2-6547. J-25

WANTED

Rare opportunity for experienced operator of molded products plant. Must be thoroughly familiar with all phases of manufacturing. Address Box 52-32 care Paper Trade Journal. J-25

WANTED

Asst. Supt. for 1-machine midwest mill making high quality boxboards. Excellent opening at good salary for well-qualified younger man. Box 52-19 care Paper Trade Journal. J-25

HELP WANTED

Personnel Service Associates

115 State St., Springfield 3, Mass.
Personnel Consultants

Confidential placement services for employers and employes in the pulp and paper industries and allied trades. Attractive positions and competent men always listed. (Administrative-technical-sales-general personnel) J-25

POWER PLANT ENGINEER WANTED to take complete charge of power department. Address Box 51-635 care Paper Trade Journal. J-25

HELP WANTED

SALARIED POSITIONS $3,500 to $35,000. We offer the original personal employment service (established 42 years). Procedure of highest ethical standards is individualized to your personal requirements. Identity covered; present position protected. Ask for particulars. R. W. BIXBY, INC. —117 Dun Bldg., Buffalo, 2, N. Y. TF

SUPERINTENDENT for Eastern Mill manufacturing fine papers. Must be a good production manager. State experience. Address Box 52-31 care Paper Trade Journal. F-1

WANTED

WANTED

MF KRAFT PAPER

For Steady Making Orders, Paper Exporter Is Looking for Regular Mill Source to Fill His Overseas Requirements. Monthly About 100 Tons Rolls Sheets 25 lbs. and up.

Address 52-22

Care of Paper Trade Journal

J-25

RATES FOR CLEARING HOUSE ADVERTISING

HELP WANTED—75c a line. Minimum charge $3.75.
SITUATIONS WANTED—75c a line. Minimum charge $3.75. If repeated ½ rate will be charged for each consecutive repetition.
FOR SALE—75c a line. Minimum charge $3.75
WANTED—75c a line. Minimum charge $3.75.
OPPORTUNITIES—75c a line. Minimum charge $3.75.

Classified advertising space may also be purchased at $5.00 per single column inch. All classified advertisements are payable in advance.
If box number is used—70 cents additional
Address replies to advertisements appearing under Box Number in care of PAPER TRADE JOURNAL, 15 West 47th Street, New York 19, N. Y.

HELP WANTED

Opportunity for paper mill engineer with both fourdrinier and cylinder machine experience with paper mill machinery manufacturer located in eastern U. S. Must have a good record, willingness to work, and ability to assume responsibility. In reply give resume of experience, educational background, age, and salary requirements. Address Box 52-12 care Paper Trade Journal. J-25

WANTED—Master Mechanic or Assistant for modern 3-Machine Tissue Mill. Progressive management; expansion program now under way. Fine opportunity for young/middle aged man to advance. Substantial paper mill mechanical experience with electrical background desirable. Give complete resume of experience in letter to Box 51-442 care Paper Trade Journal. Replies held strictly confidential. TF

WANTED — Machine Tenders and Back Tenders for corrugating medium and liner mill, Fourdrinier and cylinder machines. Located in Western Pennsylvania; good working conditions; pleasant surroundings and very good labor relations. Call collect—Tarentum 1470, TARENTUM PRODUCTS CORPORATION, Tarentum, Pa. TF

HELP WANTED

WORKING SUPERINTENDENT for small fast growing Eastern mill making lightweight specialties. Cylinder machine experience essential. State qualifications and salary expected. Address Box 51-596 care Paper Trade Journal. TF

ENGINEER—With production and control experience in manufacture of paper. Salary open—good opportunity. Address Box 52-27 care Paper Trade Journal. J-25

WANTED—Young Man in small Chicago Sales Office as assistant to mill representative. Must be typist or steno. Good opportunity for future. Address Box 52-30 care Paper Trade Journal. J-25

PLANT ENGINEER—Opportunity for qualified graduate Engineer with extensive experience in general plant engineering and operations in the Pulp and Paper Industry and particularly the kraft process. Address Box 52-2 care Paper Trade Journal. TF

SITUATIONS WANTED

MASTER MECHANIC desires job with company that has expanding program. Can do Planning, Mechanical maintenance and electrical work. Get along with men. Midle age. Address Box 52-26 care Paper Trade Journal. J-25

SITUATIONS WANTED

CHEMICAL ENGINEER — Paper school graduate desires connection with progressive company. Ten years varied experience in development and management in paper industry. Address Box 52-29 care Paper Trade Journal. F-8

FOR SALE

FOR SALE

65 tons cream laid sulphite envelope, basis weight 24x36"—45 lb., in sheets on skids 27¼x34½", price 11½c lb., F.O.B. Springfield, Mass. Box No. 52-25 care Paper Trade Journal.

J-25

We are always in the market to purchase your surplus or idle machinery. What have you to offer? Wanted Cylinder and Fourdrinier Machines (complete mills).

FOR SALE

BEARINGS
72—Top and bottom Dryer Bearings 7" diameter x 12" long.

BEATERS
1—Dilts Iron Tub Laboratory Beater. Beater roll 14" diameter x 10½" face.
1—Laboratory Beater, 1 lb., complete with motor.

CALENDER STACKS
1—9 roll 68" Calender Stack.
1—72" 4 roll calender stack. (Extra heavy duty).
1—54" Smoothing Calender Stack, 2 Iron Rolls, 2 Cotton Rolls.
1—60" 3 roll friction calender stack. All iron rolls.

CHEST
1—Cast Iron Stock Chest, 25' long x 6' high. (With agitator).

CHIPPER
1—96" Murray 4 knife Chipper—anti-friction bearings.

CLASSIFINER
1—Dilts Classifiner, practically new, with motor.

CRUSHER & HAMMERMILL
1—Murray Chip Crusher.
4—Jeffrey Hammermill.

CYLINDER MOLDS
2—30" diameter x 72" face.
1—36" diameter x 79" face.
4—36" diameter x 54" face.
1—36" diameter x 96" face.
1—48" diameter x 72" face.
1—30" diameter x 92" face.
1—36" diameter x 72" face.
1—42" diameter x 120" face.
5—42" diameter x 130" face.
1—48" diameter x 117" face.
2—36" diameter x 110" face.

DRIVES
1—Jones Reducer 75 h.p.—30.8 to 1.
1—#6½ Reeves Drive.
1—#4 Reeves Drive
1—Reliance Electric Drive, complete with 5 gear head motors.
1—#3 Reeves Drive (totally enclosed).

DRYERS
1—Complete unit, consisting of 6 dryers, 36" diameter x 38" face, including frames, gears, anti-friction bearings.
7—24" diameter x 48" face.
1—36" diameter x 143" face.
1—48" diameter x 70" face.
2—Dryers 48" diameter x 134" face.
1—24" diameter x 92½" face.
2—28" diameter x 48" face.
8—24" diameter x 60" face.
1—20" diameter x 61" face, complete with frames.
1—36" diameter x 67" face.
1—60" diameter x 68" face.
1—84" diameter x 48" face.
3—48" diameter x 88" face, with bearings and gears.

FLAT SCREENS
1—6 plate Shartle Flat Screen.
2—Packer, 12 plate, roller shoe type.
1—6 plate Sandy Hill (Packer).

FOURDRINIER PARTS FOR 134" MACHINE
6—Suction Boxes, 34 table rolls, Brass Slide Rails.

GUILLOTINE CUTTER
1—60" Cutter.

JORDANS
1—Horne Jordan.
4—Noble & Wood Mammoth.

LIME SLUDGE FILTERS
2—IMPCO Lime Sludge Filters, vacuum type, 5' diameter x 4' face.

MOTORS
1—450 h.p. synchronous, 450 r.p.m.
Write us regarding your requirements.

PRESSES
3—Sets Primary Presses, complete, 145" face. Anti-friction bearings. Also all types of rolls for 145" wet end.

PULLEYS
Various cone and assorted pulleys.

PULPERS
1—Jones Pulper. Complete with motor and drive.
1—Noble & Wood Pulper—Iron Tub.
1—Lannoye Pulper.

PUMPS
Various sizes of Centrifugal and Plunger Pumps. Write us regarding your particular requirements.
3—Shartle Brothers circulating pumps, each 4,000 g.p.m.

REELS
1—123"—3 bowl Revolving Reel.
1—72" Dowingtown Reel, 2 bowl.

REFINERS
2—#1 Claflin Refiners.

ROLLS
Felt, Table, Press, Breast, Couch, etc. Various sizes and types. (Bronze, Rubber, Iron, etc.)

ROTARY SCREENS
1—#2 Bird Rotary Screen.

SAVEALLS
1—#5 Bird Saveall.
2—Savealls, 36" diameter x 136" face cylinder molds, iron end vats.

SHEETER
1—65" Clark Sheeter, 8 roll backstand.

SHREDDERS
2—Daniels Rag Cutters.

SLITTERS & WINDERS
1—115" 2 drum Waldron
2—112" Cameron—Type 18.
1—104" Beloit two drum winder.
1—92" Moore & White 4 drum winder.
1—82" Cameron—Type 10-10.
1—62" Cameron—Type 26-3A.
1—62" Cameron—Type 8-10.
1—60" Langston (Shear cut).
1—52" Cameron—Type 8-5.
1—42" Cameron Constant Tension with pneumatic control.
1—62" Cameron—Type 10.
1—72" Cameron—Type 8-10.
1—72" Cameron—Type 10.
2—42" Cameron Type 40-1-AF

STOCK PUMPS
1—10 x 20 Shartle Duplex.
1—7 x 16 Shartle Duplex.
2—10 x 10 Beloit Duplex, low type, with motors.
Advise as to your requirements.

SUCTION COUCH ROLL
1—Sandusky Couch Roll 126" drilled face x 22" diameter

SUCTION BOXES
5—136" face Suction Boxes.
6—140" face.

TABLE ROLLS
34—5" diameter x 138" face.

THICKENERS
1—Pulp Thickener, cylinder mold 48" x 117", with spare cylinder molds.

TOILET WINDERS
2—72" Hudson-Sharp (Surface type winder).

VACUUM PUMPS
1—L-4 Nash Vacuum Pump.
1—N-82 Nash, for Fulton-Midwest System.

YANKEE DRYERS
1—48" Face x 84" Diameter, Frames & Bearings.
1—68" face x 60" diameter including frames and anti-friction bearings.

Paddy Ross, Pres. **Ben Kurs, Treas.**

J. J. ROSS COMPANY

250 Frelinghuysen Ave. **Tel.—Bigelow 3-3720** **Newark 5, N. J.**

FOR SALE

BEATERS
1—70x42" high speed broke beater with stainless steel bars
3—65x57" Jones beaters with bronze bars and iron and brass work
1—60x36" cast iron Shartle breaker beater with cast iron tub
1—54x48" Dilts bandless beater with cast iron tub
1—48x48" Stout, Mills and Temple with cast iron tub

CALENDERS
48"—68"—72"—80"—84"—89"—96" and 114" — 120"—156"

SUPERCALENDERS
55"—83"—108"

CHIPPERS
1—Ten knife 84" Carthage

SHEET CUTTERS
48"—73"—84"—90"—108"—124"—130"—156"

DRIVES
1—Five unit Westinghouse new, used on 76" machine, 300 FPM
1—Eight unit Westinghouse used on 140" machine, 930 FPM
1—Nine unit Harland used on 168" machine, 650 FPM

(REEVES DRIVES)
1—Number 0
4—Number 00

DRYERS
5—60x174"
1—10 ft. x 104" (Yankee)
3—48x86" Bearings & Gears
1—48x52" stainless steel clad
30—48x46" chromium plated

FOURDRINIER PARTS
1—150"; 1—140", 1—100" & 1—82"

GRINDERS
5—Four pocket Carthage
1—Hanchett knife grinder, 14" grinding wheel
1—Bridgeport safety Emery Wheel Co. 36" grinding wheel

HAY BALERS
1—Ohio

JORDANS
1—No. 2 Emerson Jr.
1—Jones Imperial
1—Jones Standard

MOTORS
2—Vertical Waterproof General Electric 125 HP 550 volts, sixty cycle, three phase
2—General Electric 2800 HP, synchronous, 2200 voltage sixty cycle, three phase

P.I.V. UNITS:—
2—H 1
1—VM 4 PIV with GE motor and sheave
1—HMM PIV with GE motor

PRESSES
4—Hydraulic 22"—500 Ton Sulphite Baler 3'—9" opening, 2'—6" stroke

PUMPS VAC.
1—L6 Nash all bronze practically new
1—No. 4 Nash hytor
1—No. 6 Nash
1—Roots 4A

PUMPS STOCK & WATER
3—7x9 Goulds triplex
1—10x20 Shartle duplex
1—12x12 Gould triplex
1—8" Shartle distintegrator with tank
1—Shartle agiflow centrifugal 200 GPM
1—Wortnington two stage water pump—750 gal. —120' Head

PULPERS
1—Jones with Link Belt reducer, size DM10LH
1—Jones with Falk reducer, size 70DU

RAG CUTTER
1—Giant 2B made by Taylor Stiles

REDUCERS
1—200 HP Terry
1—Falk Herringbone 4HA Ratio 3.27
1—Universal ¾ HP Ratio 720:1

REELS
1—150" Pope reel
1—210" Bagley & Sewall, anti friction bearings

REFINERS
2—Bauer 24" Single disc
1—No. 1 Claflin
1—No. 4 Shartle cyclifiner
1—Weiner

REDUCERS
1—Westinghouse, SH16, speed reducer, new, takes 50 HP motor Ratio 8:1

ROLLS (EXTRACTOR)
1—24"x130" suction extractor roll with frames, bearings, pump and motor
1—12x179" Plain extractor roll

(GRANITE)
2—26x164", new

(SUCTION COUCH)
1—30x162"
1—25x158"

(SUCTION FELT)
2—10½x170"

(SUCTION PRESS)
1—30x190"
1—18x158"
1—18x104"

SCREENS
2—12 plate Packer
1—10 plate Packer
2—Leith Walk
2—Jolly 6 plate
2—No. 2 Bird (screen plates for #2 & #3)
1—Wandell

SLICES
110"—142" (new)—152" (new)—168" Voith

SLITTERS
182" No. 19 Cameron
1—82" type 10, model 10A Cameron
1—42" Cameron #6
1—208" Moore & White 4 Drums
1—116" Warren
1—116" Moore & White 2 Drum

TURBINE
1—150 HP Westinghouse with gear reducer unit. new 1944

WASHERS
1—Lancaster 4 cylinder 36x100
1—Lancaster 3 cylinder 36x48

PAPER MACHINES
1—70" trim tissue
1—76"
1—90"
1—160" News

MISCELLANEOUS
1—New 12" Bronze Blow Valve
30 New Sound Dampeners
2 Silent Policemen

FRANK H. DAVIS COMPANY

175 RICHDALE AVE. CAMBRIDGE, 40, MASS.

F-1

FOR SALE

PAPER COATING MACHINERY MANUFACTURERS — Waxing, Oiling, Carbon Laboratory Coating and Treating and Flat Ream Measuring and Converting Machines. New improvement. THE MAYER MACHINE COMPANY, INC., 1313 Buffalo Road, Rochester, 11, N. Y. TF

FOR SALE—52" Cameron type 8 Model 5 Slitter; 48"Kidder Model CH shear cut slitter; 76" Cameron Rewinder; 75" Moore & White Upright 2 drum Reel; 42" Moore & White Sheeter; 100" Dillon Sheeter. Thomas W. Hall Company, Inc., 120 West 42nd St., New York, 18. TF

FOR SALE—Cameron 62" & 36" Slitters & Rewinders; 7" Brightwoods. SELLING OUT COMPLETE SET-UP BOX PLANTS. Bargains. Address Box 52-23 care Paper Trade Journal. TF

FOR SALE—Two machine board mill located in New York State, modern, one-story. Factory building goes with property, also water power. Address Box 52-33 care Paper Trade Journal. F-1

FOR SALE—22 x 24 Seybold 4-rod Embosser, immediately available; 37 x 52 Wagner Power Offset Proof Press; 74" Seybold 20th Century Power Cutter. Address Box 52-34 care Paper Trade Journal. F-1

WANTED

WANTED
Super Calendar
90" with 9 rolls minimum complete in good condition.
GAILLETT & HARTIG CO., Inc.
250 Park Ave. New York, N. Y.
J-25

WANTED—W & P Shredders, Evaporators, Generators and Boilers, Slitters, Cutters, Hydraulic presses, Sheridan Presses, Dryers. Address Box 51-89 care Paper Trade Journal. TF

WANTED

— WILL BUY —
CANCELLED—UNSHIPPED
REJECTED OR
OVER-STOCKED
CHEMICALS—DYES
PLASTICIZERS
PIGMENTS—OILS
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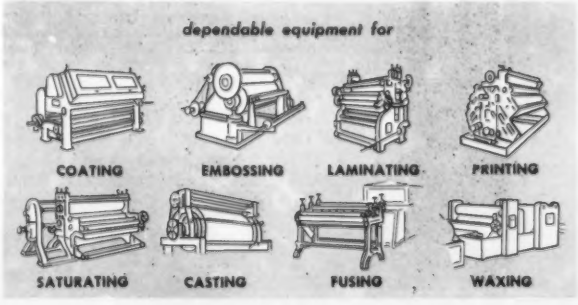

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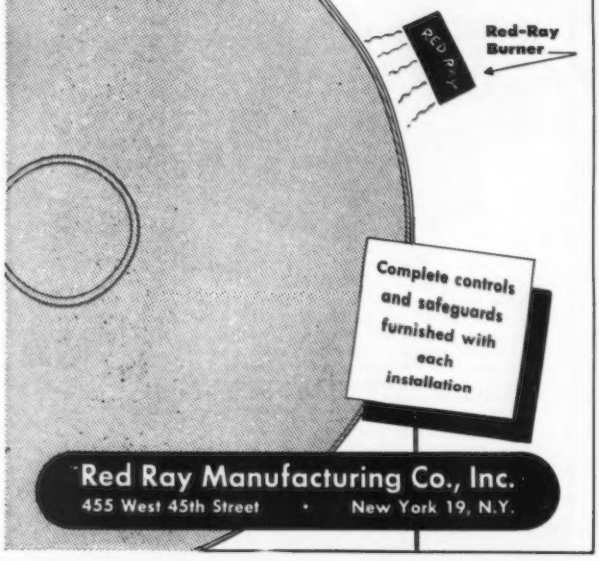

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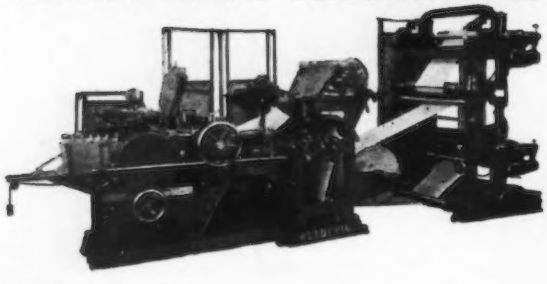

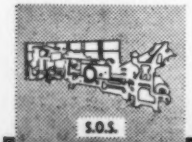

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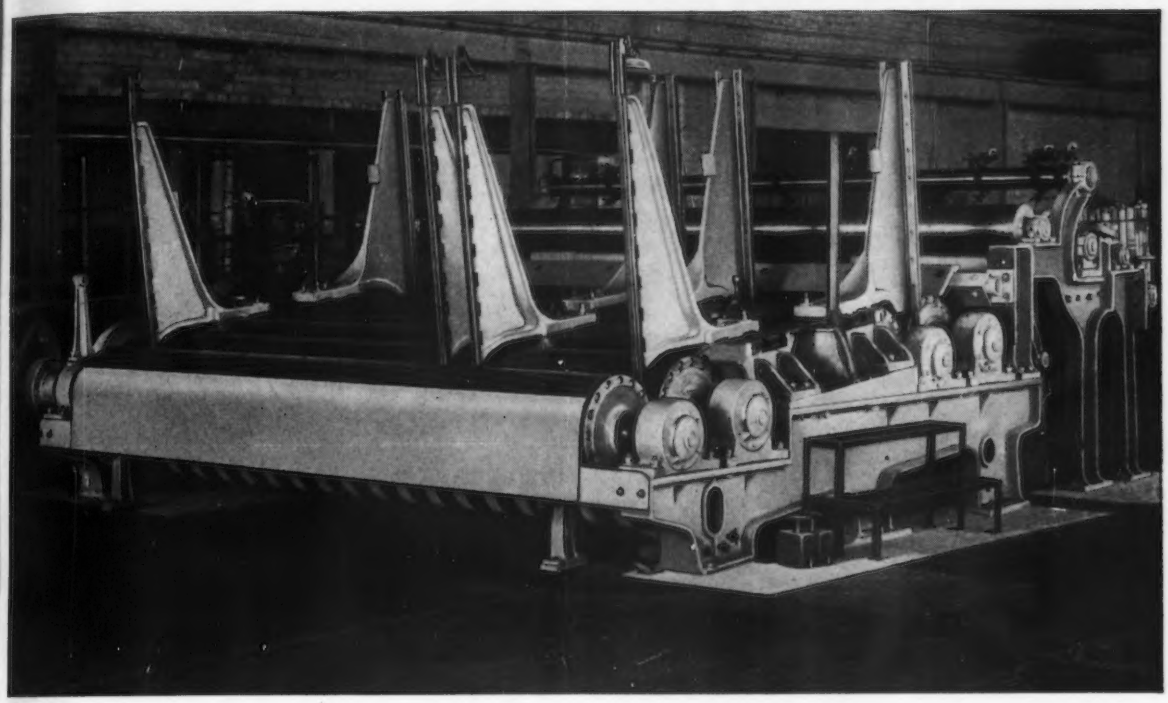

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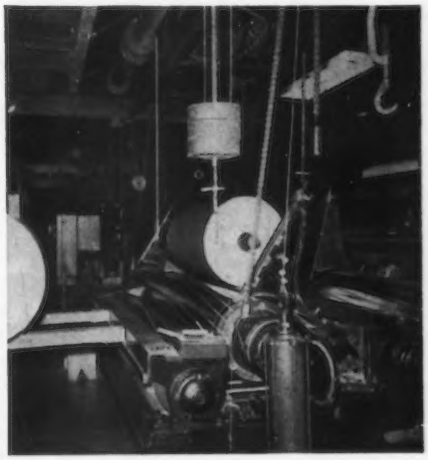

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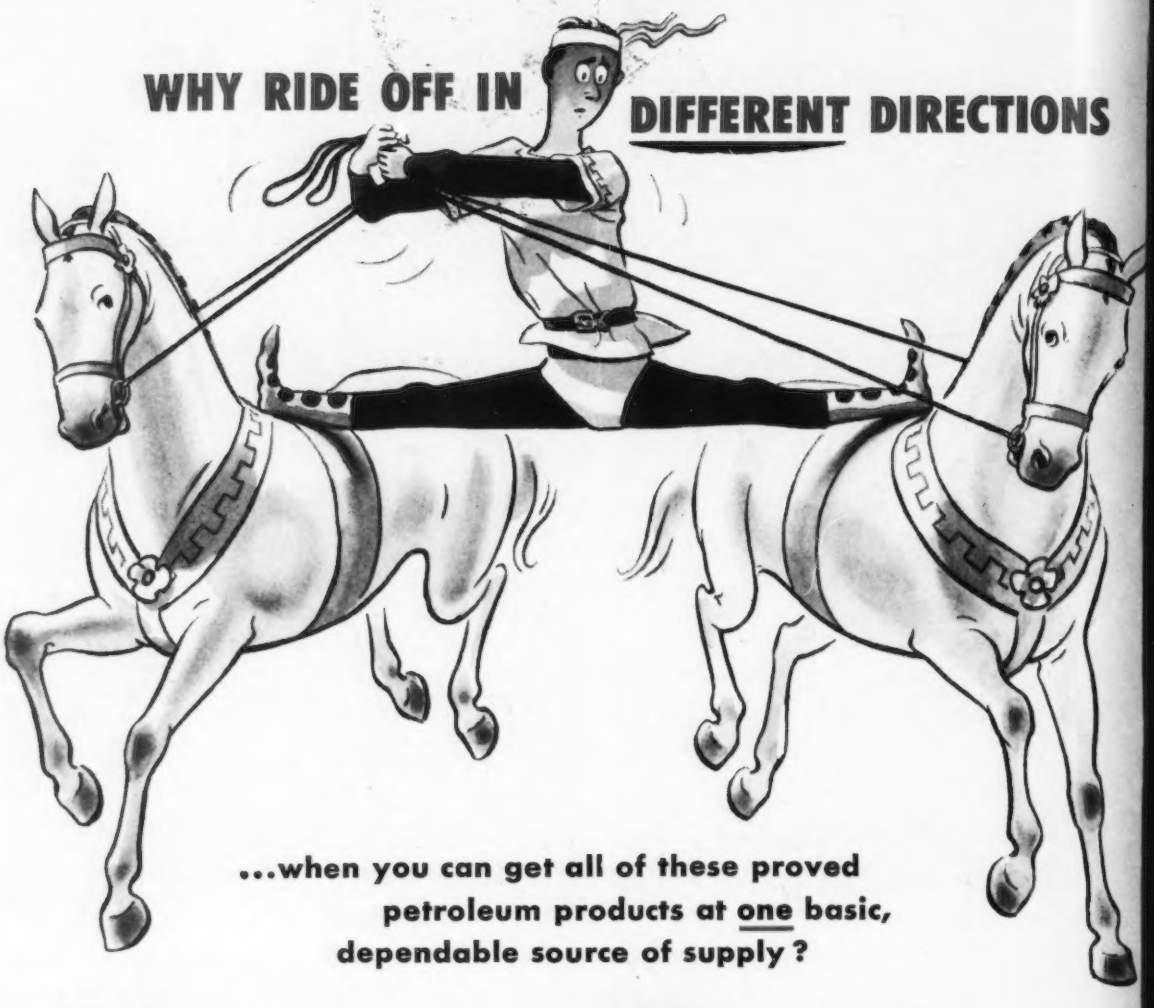

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